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Previous research has demonstrated that middle childhood is a time in which friendships go through substantial changes and begin to occupy a central role in individuals' lives. The quality of children's friendships has implications for individuals' later psychosocial outcomes and yet relatively little is known about how children come to have high quality friendships. There is a large body of literature linking elements of parenting to children's social competence, suggesting that parenting is likely to predict friendship quality as well. Drawing on the Tripartite Model of parental influence, one aim of this study was to examine the ways that mothers' child-rearing beliefs may influence children's perceptions of friendship quality. Friendship research often ignores the fact that there are two children in every friendship, and thus there is the potential for influence from two mothers. Drawing from Bronfenbrenner's ecological theory, another aim of this study is to extend previous research by examining the ways that mothers' child-rearing beliefs may influence not only their own children's perceptions of friendship quality, but also their children's friends' perceptions of friendship quality.

Utilizing a subsample of the NICHD Study of Early Child Care and Youth Development data – a longitudinal study of 1364 children and their families – the current study tested an Actor-Partner Interdependence Model whereby maternal child-rearing beliefs in fourth grade predicted children's perceived friendship quality via children's social competence. Results demonstrated mixed support for the hypothesized associations among maternal child-rearing beliefs, children's social competence, and children's

perceptions of friendship quality. There was little evidence that maternal child-rearing beliefs were associated with perceived friendship quality, either directly or indirectly through children's social competence. However, there was support for the hypothesis that maternal beliefs would be associated with children's social competence, particularly for the pathways from maternal beliefs to children's aggression. There was also some support for the hypothesis that children's social competence would be linked to their own and their friends' perceived friendship quality. These results highlight the need for additional dyadic examinations of the precursors of children's friendship quality.

MATERNAL INFLUENCES ON FRIENDSHIP QUALITY:

A DYADIC APPROACH

by

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CHAPTER I

INTRODUCTION

Friendships are critical in middle childhood because they are an integral part of social development and interaction and also become increasingly salient as individuals move from childhood into adolescence. Therefore, understanding the precursors to childhood friendship quality is critical to understanding children's social development and general well-being. Utilizing the National Institute of Child Health and Development Study of Early Child Care and Youth Development (NICHD SECCYD) data and drawing on the Tripartite Model of Family-Peer Relationships (Parke, Burks, Carson, Neville, & Boyum, 1994), Kohn's hypothesis on social class and parental values (Kohn, 1959), and Bronfenbrenner's ecological theory (Bronfenbrenner, 1979), the current study proposes a model in which mothers' beliefs about child conformity predict children's social behaviors, which then lead to children's friendship quality in sixth grade. The current study also proposes an extension of similar work by including the mothers of both children involved in each friendship, thereby introducing a dyadic approach to the study of maternal influences on children's friendship quality. Utilization of the actor-partner interdependence model allows for the analysis of the influence of both mothers and friends' characteristics on friendship quality.

Construct Definitions

Friendship Quality

Creating a definition of friendship itself has prompted intellectual discussion among researchers for decades (Rubin, Bukowski, & Parker, 2006). Who are friends? How are they distinct from peers, acquaintances, or family members? What characteristics or interactions are necessary for a relationship to be considered a friendship? These are questions that have been raised by researchers and theorists, and only moderate agreement has been achieved. Given the ambiguous nature of friendship, it is not surprising that researchers have struggled with defining the construct of friendship quality. Berndt and McCandless (2009) noted that there are two definitions of quality: (1) the degree of excellence of something and (2) the important features of something. This explanation sums up a basic problem in friendship quality research. What is friendship quality? Are we referring to the degree of excellence of friendships or the important features of friendships? The many ways in which friendship quality has been operationalized shed light on this issue. There are two critical issues to consider in the operationalization of friendship quality: the number of dimensions of interest and whether it is an individual or dyadic construct.

Virtually all measures of friendship quality group items into multiple subscales that are intended to represent multiple dimensions of relational quality. The Friendship Quality Questionnaire (Parker & Asher, 1993), the most commonly utilized measure of children's friendship quality, includes six such dimensions: companionship and recreation, validation and caring, help and guidance, intimate disclosure, conflict and

betrayal, and conflict resolution. Other measures utilize very similar subscales, with only minor to moderate variation (Berndt, 1989; Furman & Buhrmester, 1985). Occasionally researchers take a truly multidimensional approach to friendship quality and utilize all subscales individually to represent friendship quality (i.e., Grottpeter & Crick, 1996; Parker & Asher, 1993). The complexity of this approach can generate findings that are nuanced and shed light on specific interactions within friendships. Often though, subscales are chosen selectively, but discussed as if they are representative of the entire construct of friendship quality, rather than the specific dimensions the subscales are intended to measure (e.g., Thayer, Updegraff, & Delgado, 2008).

Measuring friendship quality as a single, uni-dimensional construct is a common practice in relationship research. This is particularly true for research in which friendship quality is not a focal variable, but merely supplemental (Rubin et al., 2004). A single dimension of friendship quality is appealing in its simplicity, both in terms of conceptualization and operationalization. It also achieves the goal of measuring the degree of excellence of a relationship, as discussed by Berndt and McCandless (2009). However, there are few theoretical or conceptual justifications for this option.

By including all dimensions of friendship quality on a single continuum, uni-dimensional definitions of friendship quality do not capture the nuanced, and sometimes contradictory, characteristics of friendship. This approach fails to capture the likely possibility that friendships have both positive and negative elements and that a friendship high in positive elements is not necessarily the same as a friendship low in negative elements. Another problem is that single dimension definitions of relational quality will

almost inevitably result in highly skewed measures when utilized with voluntary relationships such as friendships. Few people would remain in friendships that could be characterized as entirely negative; therefore, most friendships that are evaluated on a single continuum of quality will be relatively high in quality. They will also be skewed due to the tendency of friendship quality measures to include far more items measuring positive elements of friendship than negative, resulting in a single measure that does not adequately account for negative dimensions of friendship (Vitaro, Boivin, & Bukowski, 2009).

Berndt (1996, 2004) has argued that friendship quality is composed of two dimensions: positive and negative. He contends that uni-dimensional measures of total friendship quality tend to mask variations in friendships, but that more than two dimensions of quality are often unnecessary, for conceptual and empirical reasons. Conceptually, it is unlikely that most individuals, particularly children, clearly distinguish between constructs such as support and intimacy. Instead, Berndt suggested that children merely see the good and the bad in their relationships. Empirically, there tends to be high collinearity among positive dimensions of quality and high collinearity among negative dimensions, but only weak to moderate correlations across positive and negative dimensions (Berndt & Keefe, 1993; Furman, 1996). A bi-dimensional construct of friendship quality has been supported by factor analyses demonstrating that friendship quality items, completed by participants in middle childhood, load on two factors: positive and negative (Berndt, 1996). This bi-dimensional conceptualization has been further supported by similar findings with the Network of Relationships Inventory (NRI;

Furman & Buhrmester, 1985) completed with adolescents (Gavin & Furman, 1996). Bi-dimensional definitions are also quite common with observational measurements of friendship quality (Allen, Porter, & McFarland, 2006). Therefore, across multiple measures, methods, and age groups there is support for a bi-dimensional definition of friendship quality. Thus, this study utilizes a bi-dimensional operationalization of friendship quality that focuses on the positive and negative aspects of quality.

Another issue in the measurement of friendship quality pertains to the conceptualization of friendship quality as a dyadic or individual characteristic. To a certain extent, because friendships include two people, friendship quality is innately a dyadic construct. It is unusual, however, for researchers to measure both friends' reports of friendship quality, which has been a major criticism of the field (Furman, 1996; Rubin et al., 2006). Researchers engaged in longitudinal investigations of changes in friendship quality face particular difficulty in obtaining dyadic representations of friendship. Many childhood and adolescent friendships are short-lived (Hardy, Bukowski, & Sippola, 2002; Hartup & Stevens, 1997), and there is evidence that friendships are especially unstable in pre-adolescence and early adolescence (Poulin & Chan, 2010), which means that by the time the next wave of data collection arrives, friendships may have dissolved long ago. This means children's reports of friendship quality from one wave to another are often in reference to different friends. Therefore, the dyadic quality of friendship quality is lost across time and what is left is the portion of friendship quality that reflects individuals' characteristics.

Although there is evidence that individuals' interactions with friends are quite stable across time, even with different friends (Dishion & Owen, 2002), and that over time, individuals acquire new friends who are remarkably similar to their previous friends (Güroglu, et al., 2012), there is still reason to believe that evaluating the same dyads over time is advantageous. There is evidence that the specific individuals in a friendship are critical to evaluating friendship quality and assuming that all the friendships of a particular child are equivalent because children choose similar friends is problematic as a result of these individual differences. In cases where both friends' reports are obtained, individuals within the relationship are likely to evaluate friendship quality in discrepant ways. When friend dyads have been asked to report individually on the quality of the friendship, there are moderate correlations between their reports (positive friendship quality: $r = .37$, negative friendship quality: $r = .39$; Brendgen, Markiewicz, Doyle, & Bukowski, 2001). This leaves a considerable amount of discrepancy between reports and it is generally believed that such discrepancies are meaningful, representing true differences of opinion, rather than the result of measurement error (Berndt & McCandless, 2009; Furman, 1996). These discrepancies introduce the possibility that friendship quality is not as clearly dyadic as it may first appear. Although friendship itself is unequivocally dyadic, perceptions of friendship quality are based on the experiences and attributions of individuals.

For the purposes of this study, friendship quality is defined as individuals' perceptions of the positive and negative dimensions of their friendships. Perceived

positive friendship quality includes companionship, intimate disclosure, caring, and helping. Perceived negative friendship quality includes conflict and betrayal.

Maternal Child-Rearing Beliefs.

Maternal child-rearing beliefs are defined as mothers' views of appropriate practices and values for raising children. Specifically, this study focuses on the degree to which mothers believe that encouraging conformity in children should be a priority in child-rearing. This includes beliefs that children should all be treated the same, children should obey without question, children must be trained to behave in appropriate ways, and that children must be taught that authority figures are to be respected at all times. It does not include beliefs that children have the right to their own point of view, indulging children's ideas and opinions is worthwhile, or children's enjoyment should be a priority (Shaefer & Edgerton, 1985).

Mothers' beliefs about child conformity shape the way they parent their children. For example, within the NICHD SECCYD sample, the data proposed for this study, mothers' conformity beliefs when children were in fourth grade were correlated with a wide range of maternal behaviors in fifth grade. For instance, higher levels of conformity beliefs were correlated with lower self-reports of maternal expressiveness of both positive ($r = -.18, p < .001$) and negative emotions ($r = -.09, p < .001$). Maternal conformity beliefs were negatively associated with every subscale of the Early Adolescent Home Observation of the Environment Inventory (Bradley et al., 2000), indicating the provision of fewer learning materials in the home ($r = -.34, p < .001$), less parental modeling of cognitively stimulating activities ($r = -.32, p < .001$), and lower

levels of parental acceptance and responsivity toward the child ($r = -.23, p < .001$) among mothers who were higher in conformity beliefs. In observed tasks with their fifth-grade children in the laboratory, mothers reporting higher levels of conformity beliefs the year before were coded as less sensitive ($r = -.32, p < .001$), more hostile ($r = .19, p < .001$), showed less respect for child autonomy ($r = -.34, p < .001$), and engaged in less stimulation of child cognitive development ($r = -.29, p < .001$). In addition, mothers endorsing higher levels of conformity beliefs when children were in fourth grade engaged in less monitoring in fifth grade ($r = -.22, p < .001$) and had less knowledge of their children's activities ($r = -.12, p < .001$). Therefore, maternal conformity beliefs are an important correlate of maternal parenting behaviors, with higher levels of endorsement of conformity beliefs associated with lower levels of sensitivity, lower levels of involvement, and a lower value placed on child autonomy, emotional and cognitive expression, and learning opportunities.

Child Social Competence

Hartup and van Leishout (1995) proposed that there are three global aspects of individual social competence that are particularly relevant to children's peer relationships: prosocial behavior, antisocial or aggressive behavior, and sociability. Additional research has confirmed that these aspects are critical in friendship formation and maintenance (Güroglu, Cillessen, Haslager, & van Leisboud, 2012; Hay, Payne, & Chadwick, 2004). The current study utilizes prosocial and aggressive behavior to assess child social competence. For the purposes of this study, *child prosocial behavior* is indicated by behaviors such as helping, sharing, empathizing, and cooperating with peers

(Rose-Krasnor & Denham, 2009). *Child aggression* is behavior directed toward others that is intended to cause harm. It is indicated by physical, verbal, and relational aggression toward peers.

Contributions of the Current Study

First, the proposed study examines middle childhood friendship quality across time using a dyadic approach. As noted previously, it is rare for researchers to obtain both friends' reports of friendship quality. It is far more common to rely on a single reporter, or perhaps to observe the dyad in an interaction and code the quality of the relationship. However, there is an advantage to examining the same dyads over time, particularly in the ability to utilize individuals' characteristics and environments to predict later friendship quality. In the case of this study, the aims of the study require that the same dyads are assessed at each time point. It would be unreasonable to expect the child-rearing beliefs of one friend's mother to associate with the perceived friendship quality of a relationship with an entirely different friend two years later. Therefore, the ability to assess the same friend dyads across time is necessary for this study.

Second, this study examines the influences of parenting beliefs of both mothers of the children within the friendship. This approach extends the benefits of a dyadic view of friendship quality by also recognizing and accounting for the fact that each of the two members of the friendship comes from his or her own family environment, and each of these environments may be exerting influence on the friendship. To date, no previous studies have examined the influence of two mothers on friendship quality.

Third, the proposed study considers the manner in which the characteristics of the individual children shape not only their own perceptions of their friendship quality but also their friends' perceptions of friendship quality. There is considerable evidence that children's own social development influences their perceived friendship quality, but it may be that it is actually friends' social development that is more influential. In fact, many measures of friendship quality refer to perceptions of the friends' behavior as much as to dimensions of the relationship. Therefore, it is possible that children are not reporting on the relationship so much as their perceptions of their friend, and this study takes a step toward examining that possibility by looking at the effects of one friend's social behaviors on the other friend's perception of the friendship.

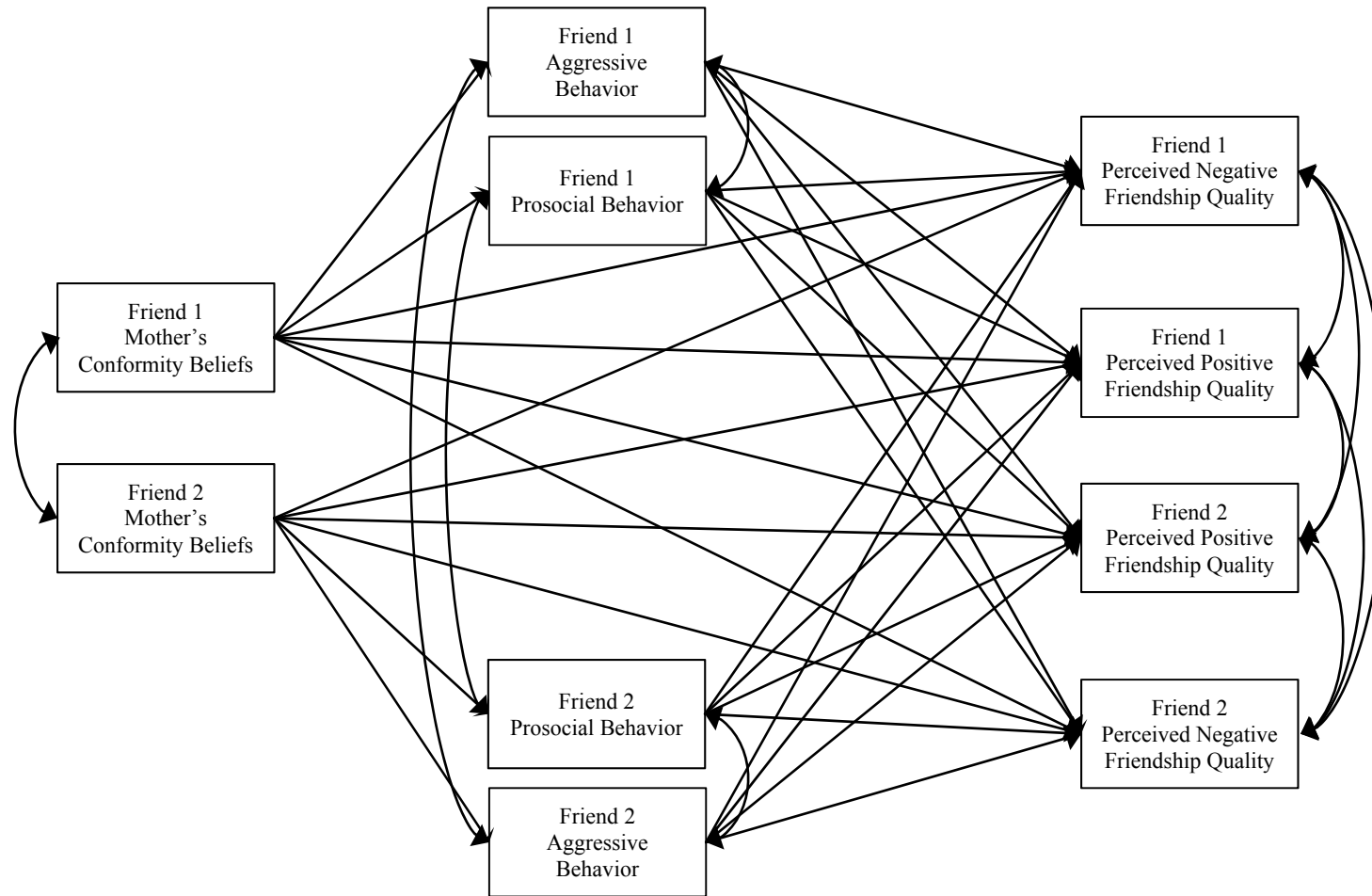
Finally, the current study examines the reports of friendship quality as constructs that represent individuals' perceptions of their friendship. This approach recognizes that there are likely to be substantial variations in friends' reports of the same friendship and that these variations may be meaningfully different. Utilizing an actor-partner model accounts for the dependencies in these data while still treating them as distinct constructs.

Conceptual Model

The goals of the current study are: (1) to examine maternal conformity beliefs as a predictor of child friendship quality, (2) to assess child social behaviors as a mechanism through which maternal conformity beliefs associate with friendship quality, (3) to explore whether the maternal conformity beliefs of a friend's mother may influence a child's perception of a friendship either directly or indirectly, and (4) to examine the ways in which one friend's social behaviors may influence his or her own as well as

friend's perceptions of the friendship. The conceptual model addressing these goals is displayed in Figure 1.

Figure 1. Conceptual Model Predicting Friendship Quality



CHAPTER II

THEORETICAL FOUNDATIONS AND REVIEW OF THE LITERATURE

Theoretical Foundations

Theoretically there are myriad ways that parents can exert influence on the quality of children's friendships, just as there are numerous theoretical mechanisms that may mediate this association. The current study draws on multiple inter-related theories. I begin by describing the theoretical justifications for examining the influence of parenting on children's friendship quality, as well as potential mediators. I then discuss how propositions from Kohn's (1959) theory of social class and parental values justify the influence of the specific construct of mothers' conformity beliefs on children's outcomes. Finally, I explain how ecological theory provides justification for the importance of acknowledging and examining both sets of mother-child relationships that shape any child's friendships.

Parental Influences on Friendship Quality

The link between parenting practices and children's peer relationships is well represented in numerous theoretical frameworks. Each of these theories begins with the hypothesis that parents influence children's development, which in turn influences children's peer relationships. The types of parent characteristics or behaviors that are thought to exert this influence differ somewhat from one theory to another and the specific mechanisms by which this influence moves from parent to child to peers differ

modestly as well. In addition, the outcomes of interest within these theories vary somewhat as well, including social competence, peer acceptance, peer attachment, and more. Although none these theories explicitly address friendship quality as the outcome of interest, it is generally assumed that friendship quality falls under the broader umbrella of peer interactions or peer relationships. A number of grand theories are commonly utilized to justify that there is a link between very broad conceptualizations of parenting and even broader conceptualizations of social competence and or peer interactions. In recent years, several mid-range theories have emerged from the foundations of these grand theories to more specifically hypothesize the ways in which specific parenting practices associate with children's social outcomes and the mechanisms by which this occurs. The current study is framed by the Tripartite Model of Family-Peer Relationships (Parke et al., 1994), a mid-range theory that draws heavily from grand theories that preceded it, particularly attachment theory and social learning theory. Therefore, I begin by summarizing the ways that attachment theory and social learning theory explain the ways parenting shapes children's social development before focusing in on a mid-range theory that specifies specific pathways in that association.

One of the grand theories often utilized to explain the associations between parenting and children's outcomes is attachment theory (Bowlby, 1958). Attachment theory is grounded in the idea that individuals form affectional bonds with their caregivers early in life in order to provide safety and security for infants, with these bonds shaping later individual development and future relationships. When children experience sensitive and responsive caregivers, they develop trust in their caregivers,

which allows them to explore their worlds with the confidence that their caregivers will protect them. Children also learn to think of themselves as individuals worthy of protection and care. These building blocks of trust and self-worth are expected to prove invaluable in future close relationships (Bowlby, 1982).

A central tenet of attachment theory is the *internal working model*, which is composed of expectations and guidelines utilized by individuals as references for navigating close relationships. The working model is a global, internalized representation of what individuals expect from their attachments, and it encompasses cognitive, emotional, and behavioral aspects (Ainsworth, 1989). Individuals' expectations and perceptions regarding specific relationships are related to the internal working model but remain distinct because the working model is developed from an accumulation of experiences and relationships and is not based on a single relationship (Bretherton, 1985).

Early iterations of attachment theory rarely addressed specific social outcomes; rather, they focused on how early parent-child relationships lead to children's overall socio-emotional well-being. Furman and colleagues advanced the way in which attachment theory can be utilized with outcomes of children's peer relationships (Furman, 2001; Furman, Simon, Schaffer, & Bouchey, 1999; Furman & Wehner, 1994). They have argued that as children age, their primary attachment relationships begin to shift from parents to friends in middle childhood, and then in adolescence they shift again to romantic relationships. This is important because it suggests that friendships fill a vital role that is specific to middle childhood and early adolescence and also has longitudinal implications. Furman and colleagues also maintained the fundamental hypothesis of

attachment theory that caregiver-child relationships are the origin of this developmental evolution of attachment relationships.

Another grand theory often utilized to explicate the links between parenting and children's peer relationships is social learning theory. According to this theory, children develop social skills through the formation of cognitive representations of behavior, which may then be applied to their own social interactions (Bandura, 1986). Children's cognitive representations of social behavior can be influenced directly by parents through advice-giving and coaching in social settings. Parents can also influence children's cognitive representations indirectly through modeling, which occurs when children observe and internalize the social behaviors of others and incorporate these internalizations into their overall cognitive representations. Whether directly or indirectly, parents shape the way children think about social interactions, which in turn shapes children's social behaviors, and that leads to influences on children's peer relationships. Unlike attachment theory, social learning theory emphasizes the cognitive mechanisms through which parents influence children's outcomes rather than the affective mechanisms (Markiewicz, Doyle, & Brendgen, 2001).

Building on the work of attachment and social learning theorists, the Tripartite Model of Family-Peer Relationships (Parke, et al., 1994) is a mid-range socialization model that identifies three pathways by which parents influence children's peer experiences. These pathways are theorized to work simultaneously.

The first path is through parent-child interactions or parent-child relationship quality. Drawing from attachment theory, the Tripartite model suggests that the positive

and negative interactions children have with their parents will have direct effects on children's interactions with their peers. The second pathway of this model involves the role of the parent as an instructor and socialization agent. It is theorized that in early childhood direct instruction takes the form of supervision over children's peer interactions, with parents providing assistance in creating positive interactions. Later in childhood, it is expected that direct instruction is more likely to take the form of discussion or coaching that occurs outside of the context of specific peer interactions. This includes parents giving advice or assisting with problem-solving related to peer interactions, as well as parental monitoring. The third and final pathway in the Tripartite model is that of the parent as a provider of opportunities. This pathway refers to any attempt by parents to create opportunities for their children to interact with peers, particularly opportunities for positive peer interactions. This can include deliberate, overt behaviors such as arranging play dates, more subtle behaviors such as choosing to live in safe neighborhoods, or inadvertent behaviors such as parents spending time within their own social networks and thereby creating opportunities for their children to spend with other children in the network.

Parke and colleagues also have identified potential child characteristics and behaviors that are expected to mediate the three pathways between parents and children's social outcomes. The authors describe the ways in which children's emotion regulation, attentional processes, and cognitive abilities may be the mechanisms through which parents influence peer relationships (O'Neill & Parke, 2000). In a recent test of the Tripartite model (McDowell & Parke, 2009), social competence was utilized as the sole

mediator through which each of the three parenting predictors were expected to shape the dependent variable of peer acceptance. The authors reasoned that children's social competence would function as a more direct mechanism between peer acceptance and parenting variables such as warmth, social advice-giving, and number of activities the child was involved in than other cognitive or emotional characteristics. They also noted that social competence is a key component of success in peer relationships (Rubin et al., 2006), and therefore was an appropriate mediator.

The Tripartite model does not address the ways in which parental beliefs may influence children's peer relationships. However, many theorists and researchers agree that parenting beliefs are the precursors of parenting practices. For example, Kohn (1969) proposed that social contexts and structures influence parents' values regarding child-rearing, which then influence their parenting practices, which in turn shape child outcomes. Similarly, Sigel and McGillicuddy-DeLisi (2002) hypothesized that parents filter information about their children and their children's actions based on their existing beliefs about children and child-rearing, and in this way their beliefs influence parenting behaviors. The current study tests whether maternal child-rearing beliefs are an antecedent to the three pathways of the Tripartite model and associate with friendship quality in much the same way as the three parental pathways of the theoretical model. Although it is not within the scope of this study to examine empirically, from a theoretical perspective, maternal child-rearing beliefs shape the three pathways of Parke's model: mother-child interactions, maternal socialization and instruction, and mother's

provision of opportunities. In turn, these maternal behaviors influence children's friendships, and such effects are mediated by children's social competence.

Conformity Beliefs

From a theoretical standpoint, much of what we know about parents' beliefs regarding child conformity - in addition to related constructs such as parental authority, child autonomy, and child obedience – is based in Kohn's theory of social class and parental beliefs (Kohn, 1959). Kohn hypothesized that parents considered to be "middle class" would value individuality, self-control, and creativity and that parents considered "working class" would value conformity, good manners, and school achievement. This hypothesis was based in the observation that these values reflect the characteristics that are most beneficial for the types of jobs these parents hold themselves and anticipate their children will hold one day. For example, success in a job in manufacturing requires adherence to a strict set of guidelines and appropriate subservience to superiors. However, success in professional fields such as law or marketing requires internal motivation, independent problem-solving, and the ability to present ideas to superiors effectively. Therefore, the child-rearing value systems of parents from either social class are reflections of parents' desires to socialize their children to the world as they experience it.

Kohn did not extend his theoretical framework to hypotheses regarding the ways in which parental value for conformity ultimately influences children's development or well-being. I suggest there are reasons to hypothesize that a conformity belief system will negatively influence children's social competence and friendship quality. Mothers who emphasize conformity are unlikely to prioritize parenting practices that could be

categorized in the second or third pathways of the Tripartite model: parent as social instructor and parent as provider of opportunities (Parke et al., 1994). Inductive problem-solving and social advice-giving as well as facilitation of children's peer-related activities that emphasize enjoyment and exploration are not consistent with a belief system that holds to the idea that children should be trained to obey, be useful, and spend time preparing for the future (Schaefer & Edgerton, 1985). These are also parenting practices that are not likely to be priorities for mothers who are low in responsivity, knowledge of child activities, respect for child autonomy, and the many other parenting practices linked with higher levels of maternal conformity beliefs. Therefore, it is unlikely that parents with this belief orientation would prioritize activities such as arranging play dates or discussing social problem-solving skills with their children because these are not conducive to the goal of conformity. According to the Tripartite model, the lack of these kinds of parenting practices would have a negative influence on peer interactions.

A Dyadic Approach to the Study of Friendship

Researchers have been calling for greater attention to be paid to the dyadic nature of friendship in general and friendship quality in particular (Ladd, 2009; Rubin et al., 2006). A dyadic approach is necessary to assess reciprocity and influence within a relationship. There are methodological barriers to examining friendship with a dyadic approach, such as difficulty in data collection and complexity of analysis; however, there are solid theoretical reasons for such an approach.

As Bronfenbrenner pointed out, children's lives exist in a wide range of contexts and those contexts are inhabited by myriad stimuli, including interactions with

individuals. To examine the child in isolation, or even within a single context, misses the complexity of influences on children's development. Bronfenbrenner (1994) conceptualized individual development as occurring within a nested set of *contexts*, or environments. Each of these contexts has reciprocal influences on individual development. Contexts are differentiated by characteristics such as normative activities, social expectations, behavioral patterns, and beliefs and values, all of which contribute to contextual influences on individual development. In addition, individuals influence their contexts by introducing stimuli, providing feedback, and contributing to stabilizing or destabilizing forces.

The first level of context is the *microsystem*, represented by the settings within which individuals directly live their lives such as family, work, and school. The characteristics of a microsystem include vital influences on development; these characteristics include physical settings, social norms and boundaries, and symbolic attributes of contexts (Bronfenbrenner, 1994). In addition, other people are integral components of microsystems in that they provide stimuli and social interactions. The potential developmental influence of a given microsystem is dependent on these other individuals (Bronfenbrenner, 1979).

The microsystem is also the level at which *proximal processes* occur. Bronfenbrenner conceptualized proximal processes as any interactions between individuals and their environments. All experiences, whether interpersonal or intrapersonal, that contribute to individual learning and change are proximal processes. Proximal processes are essential for development because they serve as the mechanisms

through which person-environment interactions influence development (Bronfenbrenner, 1994).

The second level of context is the *mesosystem*, comprised of two or more microsystems interacting in individuals' lives (Bronfenbrenner, 1994). The reciprocal influences of individuals' characteristics, and the processes in their microsystems, result in complex links between the many contexts in individuals' lives. Bronfenbrenner hypothesized that child development is enhanced by the effective linkage of microsystems (Bronfenbrenner, 1979), such as when parents and teachers collaborate in children's educational experiences, because it creates cohesion across developmental contexts. This study draws on the concept of mesosystem in the hypothesis that maternal beliefs will be linked with children's friendship quality. The processes occurring within the parent-child relationship are expected to be associated with the processes occurring within the child-friend relationship because the child is influenced by each microsystem and in turn influences each microsystem.

The third level of context is the *exosystem*, which is defined in terms of contexts that do not directly include the individual but still have the potential to influence the individual. This study utilizes the construct of the exosystem in the hypothesis that not only will children's own mothers influence their friendships, but also their friends' mothers will influence their friendships. Therefore, a microsystem in which the child is not directly included, the mother-child microsystem of their friend, is expected to shape a microsystem that does directly include the child, the friend-friend microsystem.

However, given the high level of involvement of parents in children's social activities (Ladd & Pettit, 2002), it is very possible that the parent-child and friend-friend microsystems are actually more interrelated than they may first seem. Very little is known about the frequency or quality of children's interactions with the parents of their friends. However, a common context for friend interactions is in children's homes, and interactions within this context will nearly always result in children coming into contact with the families of their friends. Even when friends go out to engage in other activities, parents are very often the chauffeurs and chaperones of such outings. Thus, it may be that many children are peripheral players in their friends' mother-child microsystems, and reciprocally, mothers are peripheral players in their children's friend-friend microsystems. In addition, it may also be the case that children's mothers are even peripheral players in their children's friends' mother-child microsystems. It is quite common for mothers of children who are friends to be friends themselves (Coleman, 1988) and thus mothers are likely to have direct interactions with the mother-child microsystems of their friends. If this is the case, perhaps the link between friend-friend microsystems and friends' mother-child microsystems is better described as a mesosystem influence rather than the more distal exosystem influence. Given the current lack of knowledge regarding how much time mothers spend with the mothers of their children's friends as well as how much time children spend with the mothers of their friends, it is impossible to say with certainty whether this is a mesosystem or exosystem influence. However, in either case, Bronfenbrenner's theory provides compelling justification for the examination of how

two individual mother-child microsystems could potentially shape a friend-friend microsystem.

Review of the Literature

Friendship in Middle Childhood

With no legal or biological ties to define them, friendships are inherently voluntary and open to personal definition. As a result, defining friendship has always been a thorny issue, with only moderate consensus across researchers. Although there is no universally accepted definition of friendship, there are characteristics that many researchers agree are necessary for friendship.

Friendships are a special type of peer relationship. Typically, friendships are defined as dyadic, reciprocal peer relationships that are best identified and defined by the individuals within them (Rubin et al., 2006). Berndt and McCandless (2009) explored the vast array of definitions and expectations applied to friendship in the literature and came to the conclusion that there is a wide continuum of relationship types that individuals may refer to as “friends.” This continuum begins with individuals who are “just friends,” then moves to good friends, close friends, and finally best friends. These types were derived from the work of Simpkins, Parke, Flyr, and Wild (2006), who developed the continuum to assess levels of reciprocity in a sample of friend dyads who were not selected through a reciprocal nomination procedure.

Much has been written about the importance of childhood and adolescent friendships as a bridge between parent-child relationships and romantic relationships. This proposition has largely stemmed from Sullivan’s interpersonal theory (1953) as well

as from attachment theory (Ainsworth, 1989). These theoretical foundations have proposed that relationships in childhood provide a framework for relationships in later life. Sullivan particularly emphasized the need for close friendships in childhood due to the voluntary, reciprocal nature of friendships, which is lacking in parent-child relationships but is essential to adult relationships. Sullivan argued that it was only within a relationship that could potentially be lost that children could experience emotional intimacy because children are forced to develop enhanced sensitivity and perspective-taking in order to maintain these voluntary relationships. Therefore, Sullivan viewed friendships as an essential element of the transition from childhood to adulthood. Building on Sullivan's theoretical framework, Furman and colleagues (Furman & Simon, 1999; Furman & Wehner, 1994) have discussed the transitory role of friendship in terms of a shifting hierarchy of attachment relationships. From this perspective, friendships take the highest position in the hierarchy for a time during middle childhood and early adolescence but later are shifted downward in salience as romantic relationships take precedence. However, this does not mean friendships drop out of the attachment hierarchy; in fact, they remain salient throughout the rest of the lifespan. This theoretical perspective demonstrates that friendships hold a special significance in middle childhood, and also that friendships at this time have the potential to shape future relationships.

Developmental Changes in Friendship Quality

Friendship quality is an essential area of study because friends are a primary source of support (Buhrmester, 1996), intimate disclosure (Newcomb & Bagwell, 1995), and companionship (Parker & Asher, 1993) in childhood and adolescence. With these

relational needs met, high-quality friendships result in youths' positive psychosocial development (Hartup, 1993; Savin-Williams & Berndt, 1990). For example, maintaining friendships throughout childhood and adolescence is negatively associated with current and long-term depression and loneliness (Pederson, Vitaro, Barker, & Borge, 2007).

As with many areas of developmental research, friendship research has often neglected middle childhood in favor of early childhood and adolescence (Huston & Ripke, 2006). However, middle childhood is a time during which children's conceptions of friendship and friendship quality change considerably. The first attempts to examine developmental changes in friendship quality focused on children's definitions and expectations of friends. Bigelow (1977) asked children to write essays about their best friends and their personal expectations of their friends. He found that children in elementary school emphasized common activities and admiration of peers. However, children in middle school were more likely to mention acceptance, loyalty, and genuineness of their friends. Although Bigelow labeled these characteristics of friendship as "expectations," it is clear that they were the precursors to friendship quality dimensions such as companionship, validation, and intimacy. The general trend in Bigelow's findings has been replicated: young children's friendships are based on shared activities, in middle childhood children begin to value shared beliefs and emotions, and it is only in adolescence that support and intimacy become central to friendship (Hartup & Stevens, 1997).

In general, reports of dimensions of positive friendship quality, such as intimacy and disclosure, increase across middle childhood and adolescence (Parker & Asher, 1993;

Way & Greene, 2006). There is some evidence that boys' friendships experience increases in these types of interactions at a sharper rate than girls', but they also enter middle childhood with lower levels than girls (Way & Greene, 2006). Intimacy in particular is much higher in middle and late adolescence than in middle childhood (Buhrmester & Furman, 1987; McNelles & Connolly, 1999). This is accompanied by increases in friendship qualities of loyalty, trust, and intimacy (Berndt, 2002). These changes are likely the result of advancements in cognition that include the ability to understand abstract values and the ability to see others' perspectives. Companionship appears to decrease as children grow older (Buhrmester & Furman, 1987), as it is replaced by more sophisticated relational dimensions. This is consistent with the previously mentioned findings that shared activities become less central to friendship as children get older (Bigelow, 1977; Hartup & Stevens, 1997).

Research on friendship quality has been highly imbalanced toward positive quality (Berndt, 2004), making it difficult to assess developmental changes in negative friendship quality. There is evidence that conflict and jealousy peak in early adolescence (Laursen & Pursell, 2009; Selman & Schultz, 1990), which makes sense given that conflict with parents also peaks in early adolescence (Grotevant, 1998). However, little else is known about changes in friends' negative quality, and even less is known about the process by which such changes might occur.

Dyadic Studies of Friendship Quality

Studies utilizing dyadic approaches to friendship have been rare, although more have been emerging, often in the examination of selection and socialization effects of

problem behaviors (Hafen, Laursen, Burk, Kerr, & Stattin, 2011). In dyadic studies where both members of the dyad report on friendship quality, the reports are often only modestly correlated. For instance, Burk and Laursen (2005) found that, in an ethnically diverse sample of adolescents, intraclass correlations of perceived friendship positivity and negativity were positively and modestly correlated ($r = .26, p < .05$; $r = .37, p < .01$). The authors then grouped dyads based on levels of perceived friendship negativity and the degree of consistency in the friends' reports of negativity. They found that dyads that were the most discrepant in their reports of perceived friendship negativity (i.e., one friend reported high levels and the other friend reported low levels) were significantly higher than individuals in other dyads in self-reports of externalizing, higher in mothers' reports of internalizing, and lower in grade point average. Another study followed children from third grade to sixth grade and examined their relationships with their best friend at each time point (Simpkins et al., 2006). The study design included following the study children across time, even as their friends changed from year to year. The authors assessed intraclass correlations of multiple dimensions of friendship quality, and found that there were few patterns among the associations between two friends' reports of friendship. They found no significant differences in agreement of perceived friendship quality by age or sex. Across ages, there were higher intraclass correlations for companionship than other friendship dimensions, ranging from .46 to .67, although this difference was only statistically significant in fifth grade. All other correlations ranged from .00 to .38.

I suggest that one reason for the discrepancy in dyad reports of friendship quality is that when children are asked to report on the quality of their friendships, it may be that they are evaluating their friends as individuals just as much as they are evaluating the friendship. For instance, friendship quality questionnaires often include items such as “my friend tells me I’m good at things” and “my friend makes me feel good about myself” (Parker & Asher, 1983). These items may better reflect children’s perceptions of their friends’ skills in interpersonal communication or perspective-taking than their perceptions of the quality of their friendship. If this is the case, examining both children’s social behaviors in relation to their reports of friendship quality should explain some of the variance that remains unaccounted for between the two reports of quality.

One common method for analyzing dyadic data is with an actor-partner interdependence model (Kenny, 1996). This model type allows researchers to assess the effect of individuals’ characteristics on their own outcomes, known as an actor effect, as well as the outcomes of the other member of the dyad, known as a partner effect. The actor-partner model is ideal for examining the predictors of perceived friendship quality for both friends in a dyad. To date, one study has utilized the actor-partner model in examining the influence of individual characteristics on dyadic perceptions of friendship quality; this study focused on adolescents. Cillessen, Jiang, West, and Laszkowski (2005) looked at the actor and partner effects of self- and peer-reported aggression, relational aggression, and prosocial behavior on five dimensions of friendship quality in a sample of adolescent dyads at a single time point. The study found equal numbers of significant actor and partner effects across the associations, with the exception of self-reported

relational aggression, for which there were only actor effects on the friendship quality dimensions. Therefore, individuals' prosocial and aggressive behaviors were associated with their own reports of their friendship quality, but they were just as likely to be related to their friends' reports as well.

Parental Influences on Friendship Quality

Linking parents and peers. The link between parents and peers has become a topic of considerable interest in developmental research, in part due to Bronfenbrenner's (1979) influence. The ecological concept of mesosystems, or interacting contexts with reciprocal influences on one another, lends itself to research regarding the intersection of parenting and peer relationships. Parental influences on peer relationships are particularly critical during middle childhood as individuals are moving from parent-focused to peer-focused interactions (McDowell & Parke, 2009) and therefore are developing relational skills, building social efficacy, and increasing in their capacity for intimacy and perspective-taking. As a result, middle childhood may be a time during which children rely especially on their parents' guidance and support as they explore their new peer relationships.

Empirically, the association between parenting behaviors, both positive and negative, and peer relationships is well established. Parental warmth, support, and acceptance have been linked to a variety of peer outcomes such as friendship quality, peer acceptance, peer group belongingness, and friend and peer group involvement (Clark & Ladd, 2000; Pettit, Bates, & Dodge, 1997; Soenens, Vansteenkiste, Smits, Lowet, & Goosens, 2007; Updegraff, McHale, Crouter, & Kupanoff, 2001). These

associations remain consistent when examined concurrently as well as across time, such as when assessing the relationship between parenting behavior and changes in friendship quality. Cui, Conger, Bryant, and Elder (2002) hypothesized that parents' behaviors toward their adolescents would directly translate to adolescents' behavior with their friends. They found that parents' supportive behavior had a direct positive effect on adolescents' supportive behavior with friends four years later, and the same was found for hostile behavior. Specifically in middle childhood, observed positive interactions between fourth grade children and their mothers and fathers have been linked with peer acceptance one year later via social cognition processes (Rah & Parke, 2008).

Child-rearing beliefs. Most research examining the link between parenting and peers has focused on either parent-child relationships or parenting practices. Considerably less is known about how parenting beliefs might shape children's peer relationships. Mothers with a conformity orientation toward child-rearing are likely to endorse beliefs such as children should obey authority figures without question, all children should be treated identically, children are naturally inclined to unacceptable behavior and must be disciplined in order to rein in this inclination, and parenting should focus on developing appropriate behavior for the future rather than focusing on experiences in the present (Schaefer & Edgerton, 1985). This belief system is linked with lower levels of maternal involvement and warmth (Luster, Rhoades, & Haas, 1989), correlated with an authoritarian parenting style (Smetana, 1995), and positively associated with harsh parenting (Miner & Clarke-Stewart, 2008) as well as maternal criticism during a children's problem-solving task (Stright, Herr, & Neitzel, 2009).

Maternal conformity beliefs are also positively associated with maternal characteristics such as stress (Deater-Deckard & Scarr, 1996), anger, anxiety, and depression (Mulvaney, Mebert, & Flint, 2007).

Mothers' beliefs about conformity have not been a primary focus of developmental research; however, they have been shown to relate to child social behaviors in a small number of studies. For instance, among first graders in the NICHD SECCYD sample, children's externalizing behaviors were positively predicted by maternal and paternal conformity beliefs (Mulvaney et al., 2007). Also, in a small sample of Hmong-American families, higher levels of maternal conformity beliefs were linked to lower levels of child autonomy in kindergarten (Stright et al., 2009).

Although there is little evidence of the association between maternal conformity beliefs and children's friendships, there is a substantial body of literature demonstrating that the parenting behaviors that are consistently negatively associated with conformity beliefs (such as maternal sensitivity, involvement, reciprocity, autonomy support, and encouragement) are clearly linked to children's positive social outcomes, indicating that maternal conformity beliefs may be detrimental to children's friendships as well as other social behaviors. Clark and Ladd (2000) found that among five-year-olds, mothers' autonomy support during a lab-based conversation task was positively related to the number of children's mutual friendships as well as the positive quality of their friendships. This effect was above and beyond any effects of parent-child connectedness. In adolescence, girls' reports of their mothers' democratic parenting behaviors were positively associated with the girls' reports of shared decision-making with their best

friends (Gold & Yanof, 1985). Utilizing the NICHD SECCYD data, McElwain, Booth-LaForce, Lansford, Wu, and Dyer (2008) found that attachment security observed between mothers and children at 36 months as well as affective mutuality exhibited by mothers in laboratory tasks when children were 54 months were directly related to children's peer competence in first grade and indirectly influenced positive and negative friendship quality (as reported by mothers and teachers) in third grade.

Aggression and Prosocial Behavior as Mediators in the Link between Parents and Friendships

One mechanism through which parental behaviors, attitudes, and beliefs influence children's peer relationships is children's social competence. For instance, McDowell and Parke (2009) tested the full Tripartite model with social competence as a mediator with a sample of fourth grade children and their parents. Using multiple indicators of parent-child interactions, parent as instructor, and provision of opportunities at time 1, a model was fit to predict children's social acceptance at time 2, mediated by their social competence at time 2. Children's social competence was indicated by teacher and peer reports of prosocial and aggressive behavior. All three parenting behaviors predicted social competence. Interestingly though, both mothers' and fathers' advice-giving had a negative influence on social competence. Social competence then positively predicted children's social acceptance. Other studies have found that hostile attribution biases or, similarly, negative social cognitive processing, can also mediate the link between parenting and peer outcomes (McElwain et al., 2008; Rah & Parke, 2008).

Aggression. There is evidence that peer-related aggression in childhood is predicted by parenting behaviors, although this association is not a consistent finding across studies and across ages. In a study of kindergartners, Weiss, Dodge, Pettit, and Bates (1992) found that harsh parenting of kindergartners predicted peer-related aggression, measured by teacher report, observation, and peer nomination, and this association was mediated by maladaptive social information processing. In a study of preschool children, authoritarian parenting was positively associated with teacher reports of child physical aggression, but only in regard to fathers' authoritarian parenting; the finding did not hold for mothers (Russell, Hart, Robinson, & Olsen, 2003). In contrast, mothers' negative conflict strategies with their partners predicted social and physical aggression in third and fourth grade, but only for girls (Underwood, Beron, Gentsch, Galperin, & Risser, 2008). An examination of the association between parental psychological control and relational aggression among Dutch adolescents found that maternal and paternal psychological control, in separate models, each predicted higher levels of adolescent relational aggression (Soenens, Vansteenkiste, Goossens, Duriez, & Niemiec, 2008).

In turn, children who are physically or verbally aggressive have been shown to have poorer friendship quality than other children. Aggressive children have more conflict in friendships (Coie et al., 1999) and lower levels of positive friendship dimensions such as closeness and intimacy (Cillessen et al., 2005; Grotzinger & Crick, 1996). Interestingly, aggressive children may not self-report higher negative friendship quality and lower positive friendship quality, but their observed peer interactions indicate

that these associations exist (Bagwell & Coie, 2004). In addition, when the friends of aggressive children have been asked to report on their friendship quality, those friends indicate more negative perceptions of the friendship than the friends of non-aggressive children (Brendgen, Vitaro, Turgeon, & Poulin, 2002). These studies suggest that the aggression of a child's friend may have a greater influence on perceived friendship quality than their own levels of aggression. This may indicate that children who are high in aggression are less accurate reporters of their friendship quality, suggesting child social deficits that extend beyond aggression. It also lends further support to the hypothesis that children's reports of friendship quality contain a good deal of information about their perceptions of the friends' social behaviors, rather than just perceptions of relationship quality.

Prosocial behavior. In comparison to the studies linking aggression to friendships, the literature examining the links between prosocial behavior and friendship is minimal (Vitaro et al., 2009), as is the link between parenting behaviors and children's prosocial behaviors. However, there is evidence that the prosocial behavior levels of friends are correlated and that friends' prosocial behaviors become more similar over time (Barry & Wentzel, 2006). One recent study found that children's prosocial behaviors of helpfulness, as observed in a lab, and agreeableness, as assessed with a questionnaire, were both positively related to concurrent perceived friendship quality among Dutch sixth-graders. Interestingly, they found that this association only held for those children who were rated as unpopular by their peers (Poorthuis, Thomaes, Denissen, van Aken, & de Castro, 2012). These studies suggest that children's own prosocial behaviors may not be the best

predictors of their perceived friendship quality. This is somewhat counterintuitive, as the definition of prosocial behavior – behavior that enhances positive social interactions – seems to suggest this association should exist. Perhaps one explanation for this is that the prosocial behaviors of a child's friend are actually stronger predictors of friendship quality than of the prosocial behavior of the child themselves.

It may also be that prosocial behavior has minimal influence on friendship quality concurrently, but has additive effects that result in higher levels of positive friendship quality over time. For example, intimacy is well known to increase and develop in middle childhood and early adolescence, thus this may be a time in which children who are high in prosocial behavior benefit because they are able to elicit self-disclosure from friends as they are moving into an age where intimate disclosure becomes more and more central to friendship quality. Therefore, as children become better able to engage in self-disclosure, and as they begin to value these intimate interactions more highly, prosocial children may be well-equipped to engage in these interactions as they develop and mature. This may be an effect that is best assessed when examining changes in friendship quality rather than at a single point in time.

Study Aims

Do mothers' beliefs regarding child conformity influence children's perceptions of friendship quality?

Hypothesis 1.1: Mothers' endorsement of conformity beliefs will be negatively associated with their child's perceived positive friendship quality.

Hypothesis 1.2: Mothers' endorsement of conformity beliefs will be positively associated with their child's perceived friendship conflict.

Is the association between maternal conformity beliefs with friendship quality mediated by children's social behavior?

Hypothesis 2.1: The associations between maternal conformity beliefs and friendship quality will be partially mediated by children's prosocial behaviors, such that there will be negative association between conformity beliefs and prosocial behavior, a positive association between prosocial behavior and perceived positive friendship quality, and a negative association between prosocial behavior and perceived friendship conflict.

Hypothesis 2.2: The associations between maternal conformity beliefs and friendship quality will be partially mediated by children's aggressive behavior, such that there will be positive association between conformity beliefs and aggressive behavior, a negative association between aggressive behavior and perceived positive friendship quality, and a negative association between prosocial behavior and perceived friendship conflict.

Hypothesis 2.3: The associations between one child's social behaviors and perceived friendship quality will not be as strong as the associations between the child's friends' social behaviors and perceived friendship quality. Thus, there will be a stronger "partner" effect than "actor" effect.

Do conformity beliefs of a best friend's mother influence children's perceptions of friendship quality?

Hypothesis 3.1: There will be no direct effects from the conformity beliefs of one mother to friendship quality of their child's best friend; however, there will be indirect effects of friends' mothers' conformity beliefs on children's perceived friendship quality through their own children's prosocial and aggressive behaviors.

CHAPTER III

METHODS

Sample and Data

Participants

This study utilized data from the National Institute of Child Health and Human Development Study of Early Child Care and Youth Development (NICHD SECCYD). Initial recruitment was conducted through hospitals in 10 locations around the United States. During specified intervals, all mothers giving birth at each location were screened for eligibility and invited to participate in the study. The eligibility criteria included: (a) the mother was at least 18 years old, (b) the mother spoke English, (c) not a multiple birth or a birth of a child with obvious disabilities, (d) family did not plan to move or live too far away, and (e) the mother did not have a substance-abuse problem. Final recruitment occurred at the first home visit when the study children were 1 month old. This resulted in a sample consisting of 1364 families. The original sample included 52% boys, 76% European American children, and 14% single-parent families. Approximately 30% of the families had low incomes, as indicated by an income-to-needs ratio of less than 2.0.

This study utilized data collected during Phase III of the project, when children were followed from second to sixth grades (2000-2004). There were 1061 participating families in this phase and one component of the phase involved bringing a friend to the

research laboratory for questionnaire completion and an observed interaction. The sample at fourth grade was 48% female, 84% White mothers, and had a mean income-to-needs ratio of 4.50 ($SD = 3.89$) with 23.2% of participants below the low-income cutoff of 2.0. For the purposes of this study, individuals will only be included if they brought the same friend into the lab during both 4th and 6th grades ($N = 340$), their friend was the same gender as themselves, and both friends' mothers participated in the study. These eligibility requirements resulted in a sample size of 309 friend dyads. This sample was utilized for all analyses in the current study.

The study children included in the current sample were 45% female, 79% White, and the mean family income-to-needs ratio at fourth grade was 4.3 ($SD = 3.26$) with 22.2% below the 2.0 low-income cutoff. The friends of the study children included in the current study were also 45% female, 84% White, and had a mean income-to-needs ratio of 4.48 ($SD = 3.72$) with 21.0% below the low-income cutoff of 2.0.

Study children who brought the same friend to the lab at both fourth and sixth grades ($N = 340$) were not significantly different on variables of interest from children who brought in a different friend ($N = 615$). Utilizing two-tailed, independent sample *t*-tests, the two groups did not show significant differences in maternal conformity beliefs ($t [934] = .04, p = .97$), child fourth grade aggressive behaviors ($t [933] = .06, p = .95$), or prosocial behaviors ($t [934] = .07, p = .94$). They were also similar in their perceived levels of negative friendship quality with sixth grade friends ($t [942] = .42, p = .64$). In addition, they were similar on all variables of friendship quality: positive friendship quality in fourth grade ($t [901] = -.01, p = .99$) and sixth grade ($t [915] = .06, p = .96$), as

well as friendship conflict in fourth grade ($t [901] = .46, p = .64$) and sixth grade ($t [923] = .41, p = .68$). The two groups were similar in sixth-grade observed friendship quality, both positive ($t [884] = .76, p = .45$) and negative ($t [884] = .30, p = .76$).

There was a significant gender difference between the group of children who brought in the same friend and the group who did not ($t [953] = 2.46, p = .01$); 53% of the children who brought in a different friend were girls, 45% of those who brought in the same friend were girls. There were no significant differences on variables of race ($t [953] = -.70, p = .48$) or income-to-needs ratio ($t [907] = -1.50, p = .13$).

Procedures

The data utilized in the current study were collected when children were in fourth and sixth grades. In both grades, study children were asked to bring a close friend into the lab with them. Guidelines for identifying the friend included that the friend should be approximately the same age (in no case was a friend who was more than 2 years older or less than 2 years younger than the study child acceptable for the purposes of the study), same-sex, someone the child had known at least six weeks, and someone they spent time with regularly. If possible, the child's "best" friend was to be chosen; however, if another close friend better met the eligibility requirements, then that child may have been deemed preferable for the purposes of the study. Questionnaires were administered to study children and their friends in the lab. Questionnaires were sent home to the mothers of both children for completion. Questionnaires were mailed to the teachers of both children for completion.

Measures

Maternal conformity beliefs. Mothers of study children as well as mothers of friends reported on their beliefs about child-rearing and discipline with the Parental Modernity Scale (Schaefer & Edgerton, 1985) scale when children were in fourth grade. This 22-item measure of “traditional” beliefs had good reliability for mothers of friends 1 and 2 ($\alpha = .87$ and $.88$ respectively). Responses were on a 5-point scale (1 = *strongly disagree*, 3 = *not sure*, 5 = *strongly agree*) and sample items include, “Children should be treated the same regardless of differences among them” and “The most important thing to teach children is absolute obedience to parents.” This variable was computed as the mean of all items. Higher values on this scale reflect a greater value for child conformity.

Prosocial and aggressive behavior. Teachers reported on children’s social behavior in fourth grade and in sixth grade with a questionnaire created for the NICHD SECCYD containing items adapted from the Child Behavior Scale (Ladd & Profilet, 1996), the Peer Victimization Scale (Kochenderfer & Ladd, 1996), and the Children's Social Behavior Scale (Crick, 1996). Teachers rated children on 43 items using a 3-point scale (0 = *Not True*, 1 = *Sometimes True*, and 2 = *Often True*). In the current study, a nine-item measure of child *Prosocial Behavior* ($\alpha = .80$) was utilized. It includes items such as “Kind toward peers” and “Listens to classmates.” *Aggressive behavior* is also a nine-item measure ($\alpha = .80$), including items such as “Taunts and teases other children” and “Threatens other children.” Both prosocial and aggressive variables were computed as means of the items in the subscales, using imputation by proportional weighting. The

subscale of aggression was positively skewed and thus was transformed with a square root transformation, which resulted in a normal distribution.

Perceived friendship quality. Children's perceptions of the quality of their relationship with their best or close friend were measured with children's and friends' reports on an abbreviated version of the Friendship Quality Questionnaire (FQQ; Parker & Asher, 1993). The FQQ is a 40-item measure with six subscales in the FQQ and items are rated on a 5-point Likert scale (1 = *Not True* to 5 = *Really True*), although only 20 items were administered in the NICHD study. The subscales of the original measures include companionship and recreation, validation and caring, help and guidance, intimate disclosure, conflict resolution, and conflict resolution. However, considering that some of these subscales contained only two to three items after reducing the measure by half, factor analyses were conducted to re-establish the validity of subscales. Details of these analyses are presented in the results.

Demographics. The ethnicity of friends who were brought in to the lab was not assessed directly, but the ethnicity of their mothers and fathers was assessed. Therefore, the ethnicity of all children included in analyses was computed such that if either parent indicated they were anything other than European American, the child was considered an ethnic minority (0 = *White*, 1 = *non-White*). An income-to-needs ratio was utilized to control for socioeconomic status of the families of each member of the dyad. Only same-sex friend dyads were included in the current analyses, so gender was treated as a dyad-level variable (0 = *boys*, 1 = *girls*).

Analytic Plan

Factor Analyses

Exploratory factor analyses (EFA) were conducted on the Friendship Quality Questionnaire items to establish that the abbreviated version of the measure conformed to the findings of previous studies and loaded onto two factors. Due to the dependence of the dyadic data, factor analyses were conducted on one, randomly selected, friend from each dyad. An EFA was conducted at each time point (fourth grade and sixth grade), utilizing MPlus Version 7 (Muthén & Muthén, 2012). A geomin rotation was utilized, which allows for correlations among the factors. Analyses were interpreted utilizing comparisons of model fit statistics, as well as by examination of scree plots, factor loadings, and modification indices. After arriving at a satisfactory solution, the factors were then corroborated utilizing confirmatory factor analyses (CFA) in Mplus. As with the EFAs, the CFA models were evaluated with tests of model fit comparisons, in addition to evaluation of the factor loadings. The factors were then utilized to create mean composites, which were examined for internal reliability.

Actor-Partner Interdependence Mediation Models for Indistinguishable Dyads

The current study examined research questions for which all variables represent individual constructs, but are equivalent across dyad partners. For instance, the independent variable, mothers' conformity beliefs, is an individual-level construct, but it was collected identically from the mothers of both members of each dyad. Therefore, the current research questions are best addressed with an actor-partner interdependence model (APIM; Kenny, 1996; Kenny & Cook, 1999). The APIM allows for the

comparison of influence from one member of the dyad onto their own outcomes, as well as their partner's outcomes, while accounting for the statistical dependency between the partners. However, the APIM has generally been limited to use in cases with a single set of independent variables and a single set of dependent variables. Recently, Lederman and colleagues (Lederman & Macho, 2009; Lederman, Macho, & Kenny, 2011) have introduced the APIMeM, an actor-partner model with mediation. The current study will utilize the APIMeM for all focal analyses.

An important issue in the analysis of dyadic data is whether the dyads are distinguishable or indistinguishable. Indistinguishable dyads (also called undifferentiated or interchangeable dyads) are relationships in which the two partners are theoretically and empirically equivalent (Kenny, Kashy, & Cook, 2009). These are relationships in which there is no identifying characteristic that clearly distinguishes one partner from another across all dyads, such as gender in heterosexual couples or relational role in parent-child dyads. Therefore, the two members of the dyad cannot be easily separated into two distinct groups. Same-sex childhood friendships are indistinguishable dyads. The NICHD SECCYD sample introduces a complication with the assumption of indistinguishability. The members of the dyad could easily be distinguished by their status as either a study child or the friend of a study child. However, given that this distinction was not theoretically meaningful to the current study aims, this categorization was not utilized in this study. Instead, the dyad members were randomly assigned to their status of either "friend 1" or "friend 2" in order to reinforce their indistinguishable nature.

All focal analyses were conducted with structural equation models using MPlus Version 7 (Muthén & Muthén, 2012). Dyadic models were tested utilizing procedures for an actor-partner model with mediation for indistinguishable dyads, as outlined by Lederman et al. (2011). Actor-partner independence models for indistinguishable dyads require all paired parameters to be held equivalent across the two dyad members. For example, the intercepts and variances of each variable are constrained to be equal for both friends. Similarly, all paths in the model are constrained to be equal for both friends. In this way, the dyad members are statistically indistinguishable. The indirect effects of the APIMeM are tested utilizing bootstrapping methods.

Each model included a pair of independent variables, which were the child-rearing beliefs of mother 1 and mother 2 when children were in fourth grade. Each model included a pair of mediating variables, either children's prosocial behavior or aggressive behaviors, as reported by teachers. Finally, each model contained pairs of dependent variables of friendship quality as indicated by the preliminary factor analyses. Three sets of models were conducted: a cross-sectional fourth-grade model, a prospective model from fourth to sixth grade, and a longitudinal model from fourth to sixth grade controlling for fourth-grade variables. All models included control variables of dyad gender, child ethnicity, and families' income-to-needs ratios at fourth grade. All focal variables were regressed on to all control variables.

Model fit. Kenny, Kashy, and Cook (2009) have argued that analyzing indistinguishable dyads in an actor-partner SEM introduces a unique problem with model fit statistics. The arbitrary assignment of one dyad member as friend 1 and the other as

friend 2 will nearly always result in a lowering of model fit because it introduces a source of variance that is unaccounted for in the statistical model. However, this source of variance is not meaningful in assessing the overall model, and thus should not be interpreted as a fault in the model. Instead, model fit statistics that are more accurate representations of the goodness of fit for a model with indistinguishable dyads must be calculated (Olsen & Kenny, 2006). However, for the purposes of this study, all model fit statistics were adequate and therefore I did not proceed with the model fit fixes suggested by Kenny and colleagues.

Gender moderation. The models were tested for gender moderation through multiple groups SEM analyses with two groups: boys and girls. The models were run with all parameters constrained to be equal for the two groups and then freeing the pathway parameters to estimate freely and then compared to the constrained model and examined for differences in model fit.

CHAPTER IV

RESULTS

Preliminary Analyses

Missing Data Analysis

Analysis of the missing data indicated that missingness of individual variables ranged from 0% to 28%. Little's MCAR test was non-significant, $\chi^2(710) = 760.15, p = .09$, indicating the missing data were missing completely at random. The primary source of missing data was from teacher reports, ranging from 5% to 28% across both friends and both waves of data collection. Due to the eligibility requirements for the current study, there were no missing data for the friendship quality variables. Cases were only included in the current study if they had the same friend come in at both fourth grade and sixth grade, which meant all cases had friendship quality data at both ages for both children. All focal analyses were path analyses conducted in Mplus and utilized Full Information Maximum Likelihood to address missing data.

Preliminary Factor Analyses

Exploratory factor analyses were conducted on the abbreviated Friendship Quality Questionnaire for fourth and sixth grades. Examination of scree plots indicated that a three-factor solution was most appropriate and model fit statistics indicated that a three-factor solution fit had adequate fit for both fourth and sixth grade (Table 1). Analyses indicated that one item, "Always sit together at lunch," did not load on to any of the

factors. Considering that only about a third of the sample were in the same class as their friend (4th Grade = 37%, 6th Grade = 35%) and therefore most of the sample likely did not have the opportunity to eat lunch with their friend even if they wanted to, it is not surprising that this item was problematic. Thus, this item was dropped from all further analyses. Based on factor loadings obtained in the EFA (Table 2), CFAs were conducted. Initial CFAs indicated that a three-factor solution was generally appropriate, but minor changes were required. The factor loading of one item was quite low for both fourth and sixth grade, “Doesn’t listen to me.” Therefore this item was dropped from all further analyses. In the original measure, this item loaded onto a factor labeled “Conflict and Betrayal,” but all other betrayal items were dropped in this study, leaving only the conflict items. Thus, not only did this item fail to fit with any of the factors statistically, it was also conceptually problematic.

Model fit of this initial measurement model was poor, χ^2 (579, $N = 309$) = 1281.72, $p = .00$, CFI = .87, RMSEA = .06 [.056, .065]. Examination of the modification indices suggested that a few items were associated with each other above and beyond the latent factor they were loaded on. For example, “This friend and I loan each other things all the time” and “This friend often helps me with things so I can get done quicker” were highly correlated and allowing the model to correlate the error terms of these items improved model fit. There were three other pairs of items that were similarly correlated. In each case, they were items that were part of the same original subscales and were now loading onto a larger, more general factor. The final model (Figure 1), with three factors

each for fourth and sixth grade, had adequate fit, $\chi^2 (573, N = 309) = 1108.06, p = .00$, CFI = .90, RMSEA = .05 [.048, .057].

Measurement invariance analyses indicated that the models were not equivalent in fourth and sixth grade. A model constraining the factor loadings to be equal at each age was significantly poorer in model fit than an unconstrained model, $\Delta\chi^2 (18, N = 309) = 57.09, p = .00$, indicating that these constraints did not fit the data and the questionnaire did not meet the requirements for metric invariance (van de Schoot, Lugtig, & Hox, 2012). Nevertheless, factor loadings indicated the items of the questionnaire loaded onto the same latent factors at each age and this was verified by an examination of modification indices. Therefore, the three-factor solution was retained for fourth and sixth grades. Items and factor loadings are presented in Table 3.

The three factors indicated by the factor analyses were positive friendship quality, conflict, and conflict resolution (see Table 3). The positive friendship quality factor included 12 items. Reliability analysis of these items indicated high internal reliability in both groups of children (Friend 1 and Friend 2) at both time points (fourth and sixth grades; $\alpha = .86, .93$). The conflict factor included three items and had adequate reliability ($\alpha = .77, .85$). The conflict resolution factor included only two items and was not sufficiently reliable ($\alpha = .66, .73$), thus it was dropped from further analyses.

Correlations and Descriptive Statistics

Table 4 presents descriptive statistics and correlations for all model variables. The demographic variables of the children and their families were significantly associated with model variables. Dyad gender was highly correlated with prosocial and aggressive

behavior as well as positive friendship quality. Girls had higher levels of prosocial behavior and positive friendship quality and lower levels of aggressive behavior than boys. Child race was significantly associated with the conformity beliefs of children's own mothers as well as their friends' mothers, such that mothers of White children had lower levels of conformity beliefs than mothers of non-white children. Family income-to-needs ratios were similarly associated with maternal beliefs, such that higher ratios were associated with lower conformity beliefs. Child race was also correlated with children's prosocial and aggressive behavior, although these correlations were not entirely consistent across the two friends or across the two time points. Family income-to-needs ratios were more consistently associated with child prosocial and aggressive behavior. Children's prosocial behaviors in fourth and sixth grade were positively correlated with income-to-needs ratios of their own families as well as their friends' families. Similarly, children's aggressive behaviors in fourth and sixth grade were negatively correlated with income-to-needs ratios of their own families as well as their friends' families. However, these correlations did not hold for the family income of the study child with the behavior of their friend. In general, race and income were not significantly associated with friendship quality variables. Due to their significant correlations among multiple model variables, dyad gender, child race, and family income-to-needs ratios were included as covariates in the focal analyses.

Mothers' conformity beliefs in fourth grade were significantly negatively correlated with their own children's prosocial behavior in fourth grade as well as the prosocial behavior of their children's friends. The maternal beliefs of the mothers of

Friend 1 were also correlated with sixth grade prosocial behavior of both children, although the maternal beliefs of the other friends' mothers were not correlated with the prosocial behaviors of either child in sixth grade. This indicated that higher levels of mothers' conformity beliefs continued to be related to lower levels of prosocial behavior in their own children two years later, but the association over time did not hold for friends' prosocial behavior. Maternal beliefs were more consistently correlated with children's aggressive behavior for both children at both ages, with higher levels of mothers' conformity beliefs linked to higher levels of both children's aggressive behavior at each age. Maternal beliefs were not correlated with any friendship quality variables except a positive association of both mothers' beliefs with Friend 1's report of conflict in sixth grade.

Children's prosocial behaviors were inconsistently related to their reports of friendship quality. Most of these correlations were non-significant, although Friend 1's fourth grade prosocial behavior was linked with some of their own and their friends' reports of positive friendship quality and conflict. Also, Friend 1's sixth grade prosocial behavior was significantly positively associated with their friends' reports of positive friendship quality in sixth grade. Children's aggressive behaviors were generally not associated with positive friendship quality reports at either age, with the exception of study children's prosocial behavior in sixth grade was positively correlated with their friends' reports of positive friendship quality in sixth grade. The correlations between children's aggressive behavior and friendship conflict were inconsistent and there was no clear pattern to those that were significant. Due to the high correlations between prosocial

behavior and aggression ($r = -.32$ to $-.46$, $p < .001$), these were modeled separately in focal analyses.

Due to the potential for Pearson's correlations to be inflated as a result of dyadic dependence, interpreting intraclass correlations (ICC) is preferable when examining similarity between indistinguishable dyads (Griffin & Gonzalez, 1995; Kenny, Kashy, & Cook, 2006). Intraclass correlations are calculated by running one-way ANOVAs with dyads as the independent variable. Then the Mean Square Between (MS_B) and Mean Square Within (MS_W) are utilized to calculate the ICC, $(MS_B - MS_W) / (MS_B + MS_W)$. Significance of the ICCs is established utilizing an F test of MS_B / MS_W , where the degrees of freedom for MS_B is the number of dyads minus one and the degrees of freedom for MS_W is the number of dyads. These coefficients are presented in Table 5. All ICCs were statistically significant, indicating that the data were non-independent, as expected, and that friends demonstrated strong similarities to each other. ICCs can also be interpreted as the percent of variance that is dyadic.

Focal Analyses

Cross-Sectional Fourth-Grade APIMeM Analyses

Prosocial. Focal analyses began with the examination of the hypothesized model in fourth grade with prosocial behavior as the mediator. This model did not fit well, χ^2 (48, $N = 309$) = 92.43, $p = .00$, CFI = .85, RMSEA = .06. Examination of the modification indices indicated that the poor fit was primarily due to holding the intercepts

of friendship conflict equivalent across the friends.¹ Releasing this constraint resulted in a model on the lower bounds of adequate fit, $\chi^2 (47, N = 309) = 77.74, p = .00, CFI = .90, RMSEA = .05$; therefore, this version of the model was utilized for interpretation (Table 6, Figure 2).

First, correlations across the pairs of focal variables were individually examined. Conformity beliefs of the mothers of friend dyads were significantly and positively correlated ($r = .20, p < .001$), indicating that children's mothers held similar beliefs to the mothers of their friends. Prosocial behaviors of both children were also significantly correlated ($r = .17, p < .05$), indicating that members of the friend dyads were similar in these social characteristics. Finally, friends' reports of positive friendship quality were positively correlated ($r = .15, p < .01$) as were their reports of friendship conflict ($r = .24, p < .001$). Children's own positive friendship quality and friendship conflict were negatively correlated ($r = -.23, p < .001$). In addition, children's reports of their perceived positive friendship quality were negatively associated with their friends' reports of perceived friendship conflict ($r = -.12, p < .01$). Thus, higher levels of reported positive friendship quality were related to lower levels of children's own reports of friendship conflict as well as their friends' reports of friendship conflict.

Next, direct paths of the hypothesized model were individually examined. There was a significant actor effect from maternal child-rearing beliefs to child prosocial

¹ Paired sample t-tests of the fourth-grade friendship conflict variables revealed a significant difference in mean levels ($t [308] = 3.90, p < .001$), which explains why the equivalence constraint led to poor model fit. Examination of the variables did not show any outliers of concern and the two variables had the same range and similar standard deviations. In addition, the fact that there were no problems with the equivalence constraints on the paths leading to the conflict variables or the residuals of the conflict variables suggests that lifting the constraint on mean equivalence did not alter the analyses of the focal research questions in a meaningful way.

behavior ($\beta = -.10, p < .05$), indicating that higher levels of conformity beliefs of mothers had were associated with lower levels of children's prosocial behavior above and beyond the race and income-to-needs of both families. There were no significant pathways from prosocial behavior to either friendship outcome. Therefore, children's levels of prosocial behavior were unrelated to their own reports as well as their friends' reports of friendship quality.

Aggression. Model 2 was identical to Model 1, but included aggression as the mediator between maternal beliefs and the friendship outcomes. This model fit well after releasing the equality constraints on the intercepts of the conflict variables, $\chi^2 (47, N = 309) = 56.58, p = .16, CFI = .96, RMSEA = .03$ (Table 7). Children's aggression was positively correlated with their friends' aggression ($r = .18, p < .05$), indicating children were similar to their friends in prosocial levels. There were significant actor and partner effects from maternal beliefs to children's aggression. The beliefs of children's own mothers were positively associated with their aggression ($\beta = .09, p < .05$) as were the beliefs of their friends' mothers ($\beta = .10, p < .05$), indicating that higher levels of mothers' conformity beliefs were linked with higher levels of aggression in their own children as well as their children's friends. In turn, children's aggression was significantly linked with their own perceptions of friendship conflict ($\beta = .09, p < .05$) and had a trend-level effect on their perceptions of positive friendship quality ($\beta = -.09, p = .06$). Thus, children with higher levels of aggression in 4th grade also had higher levels of perceived friendship conflict and lower levels of perceived friendship quality in 4th grade. Indirect effects from maternal beliefs to friendship conflict and positive friendship quality were

tested using a bias-corrected bootstrapping procedure (5,000 draws). This approach has been shown to generate the most accurate confidence intervals for indirect effects, reducing Type 1 error rates and increasing power over other similar tests (MacKinnon, Lockwood, & Williams, 2004). There were no significant indirect effects in the model, indicating a lack of significant mediation from maternal child-rearing beliefs to friendship quality via aggression in the 4th grade model.

Prospective APIMeM Analyses

The next set of models examined the associations between maternal beliefs at fourth grade and children's behaviors and friendship quality at sixth grade. These models retained the control variables of dyad sex, child race, and families' income-to-needs ratios in fourth grade.

Prosocial. Model 3 examined the associations between fourth grade maternal beliefs, sixth grade prosocial behavior, and sixth grade positive friendship quality and friendship conflict. This model had adequate fit, $\chi^2 (48, N = 309) = 70.86, p = .02$, CFI = .92, RMSEA = .04 (Table 8, Figure 4). The sixth-grade conflict variables did not have the problem of the fourth-grade conflict variables and therefore the equality constraints on the intercepts of these variables were retained. An examination of correlations between paired variables indicated that mothers' beliefs remained positively correlated ($r = .20, p < .001$), but the positive association of prosocial behavior between the friends shifted to trend-level significance ($r = .13, p = .06$). Thus, children's levels of prosocial behavior were not significantly related to their friends' prosocial behavior in sixth grade as they were in fourth grade. The correlation between friends' reports of positive

friendship quality remained positively and significantly correlated ($r = .16, p < .01$) as did the correlation between friendship conflict reports ($r = .29, p < .001$), indicating that children continued to report on their friendship quality in similar ways as their friends in sixth grade just as they did in fourth grade. Children's reports of their own perceptions of positive friendship quality and conflict were significantly negatively correlated ($r = -.18, p < .001$). Unlike the fourth grade model, there were no significant associations between maternal beliefs and children's prosocial behavior in the prospective model, indicating that the link between mothers' conformity beliefs and children's prosocial behaviors did not hold when these were examined two years apart. However, there was a significant partner effect from children's prosocial behavior to their friends' perceived friendship conflict ($\beta = -.10, p < .05$), indicating that higher levels of prosocial behavior was related to their friends reporting lower levels of conflict. Comparing this model to a model in which the actor and partner effects from prosocial behavior to friendship conflict were held equivalent, $\chi^2 (49, N = 309) = 73.89, p = .04$, CFI = .92, RMSEA = .04, demonstrated trend-level significance, $\Delta\chi^2 (1, N = 309) = 3.03, p = .08$, suggesting that the partner path may be stronger than the actor path, as hypothesized. There were no other significant paths in the model.

Aggression. In the aggression model, Model 4 (Table 9), $\chi^2 (48, N = 309) = 65.79, p = .04$, CFI = .94, RMSEA = .04, the associations between the beliefs of both mothers to children's aggression remained significant (actor: $\beta = .10, p < .05$; partner: $\beta = .13, p < .01$). However, the associations between aggression and friendship quality were quite different in this model compared to the fourth-grade model. The actor effect from

aggression to friendship conflict was no longer significant ($\beta = .00, p = .97$), and there was a significant partner effect predicting conflict that was not present at fourth grade ($\beta = .09, p < .05$), indicating that, in sixth grade, higher levels of aggression were related to higher levels of children's own reported friendship conflict. The indirect effects from maternal beliefs to friendship conflict via child aggression were not significant (actor: estimate = .00, 95% CI [.000, .010]; partner: estimate = .00 95% CI [.000, .012]. Therefore, although there were direct effects from maternal beliefs to child aggression and from child aggression to friendship conflict, there was not sufficient evidence for mediation.

Longitudinal APIMeM Analyses

Next, a set of models were analyzed that retained the sixth grade measures, but controlled for their fourth grade equivalents. This allowed for the examination of whether the models predicted changes in children's behavior and friendships.

Prosocial. Model 5 introduced a model identical to Model 3 but this time including aggression, prosocial behavior, positive friendship quality, and friendship conflict at fourth grade as controls (Table 10, Figure 6). Just as with Models 1 and 2, the equality constraints on fourth-grade conflict created poor model fit and so these constraints were removed. This was not a problem with sixth-grade conflict variables. This model fit adequately, $\chi^2 (123, N = 309) = 171.73, p = .00, CFI = .94, RMSEA = .04$. Adding the fourth-grade control variables removed all significant pathways from the model.

Aggression. Model 6 was identical to the previous model, but included aggression rather than prosocial behavior. The model fit well, $\chi^2 (123, N = 309) = 171.73, p = .00$, CFI = .94, RMSEA = .04. The partner effect from maternal beliefs to child aggression remained significant ($\beta = .08, p < .05$), but the actor effect disappeared, indicating that mothers' conformity beliefs predicted changes in the aggression levels of their children's friends but did not predict changes in their own children's aggression from fourth to sixth grades. There was a trend-level negative partner effect between aggression and positive friendship quality ($\beta = -.07, p = .07$) as well as a significant partner effect from aggression to friendship conflict ($\beta = .08, p < .05$), indicating that children's changes in aggression from fourth to sixth grade predicted changes in their friends' perceptions of the friendship across the same time period. To test whether these partner effects were stronger than the actor effects, models were run that held actor and partner effects equivalent. The model holding actor and partner effects from child aggression to positive friendship quality, $\chi^2 (124, N = 309) = 174.10, p = .00$, CFI = .94, RMSEA = .04, was not significantly different from the model allowing these paths to estimate freely, $\Delta\chi^2 (1, N = 309) = 2.37, p = .12$. The same was true for the modeling comparing the actor and partner effects from child aggression to friendship conflict, $\chi^2 (124, N = 309) = 174.61, p = .00$, CFI = .93, RMSEA = .04, $\Delta\chi^2 (1, N = 309) = 2.88, p = .09$. Therefore, although the partner pathways appeared to be stronger than the actor pathways, these were not statistically significant differences. The indirect effect pathway from maternal beliefs to positive friendship quality via friends' aggression was not significant (estimate = -.01,

95% CI [-.002, .000]) nor was the indirect effect to friendship conflict (estimate = .00, 95% CI [.000, .007]).

Analyses of Gender Moderation

After establishing that Models 5 and 6 had adequate fit, I followed up with an analysis of gender moderation of the models. A model identical to Model 5 was run as a multiple groups analysis with two groups: boys and girls. A model that constrained all parameters to be equal for boys and girls, $\chi^2 (267, N = 309) = 376.95, p = .00, CFI = .80, RMSEA = .05$, was compared to a model that allowed the pathways of the model to estimate freely, $\chi^2 (257, N = 309) = 328.66, p = .00, CFI = .87, RMSEA = .04$. There was a significant change in model fit, $\Delta\chi^2 (10, N = 309) = 49.68, p = .00$, indicating the model with freed pathways was a better fit than the fully constrained model, which suggests gender moderation. However, the resulting model did not have adequate fit and examination of the pathway estimates revealed that all paths remained non-significant for both boys and girls despite the change in model fit.

Results were similar for the gender moderation analyses of the longitudinal aggression model. The chi-square difference test comparing the fully constrained model to the freed paths model was significant, $\Delta\chi^2 (10, N = 309) = 49.34, p = .00$, but the model fit of the freed paths model was poor, $\chi^2 (257, N = 309) = 340.48, p = .00, CFI = .87, RMSEA = .05$. Thus, the tests of gender moderation were inconclusive.

CHAPTER V

DISCUSSION

The goal of the current study was to improve our understanding of the ways in which mothers' beliefs are associated with their children's friendship quality, and whether these effects may be dyadic. Previous theoretical and empirical work has demonstrated that parents exert influence on the quality of their children's friendships (McDowell & Parke, 2009; O'Neil & Parke, 2000). There is also growing consensus that children's own social characteristics influence the quality of their friendships (Cillessen et al., 2005; Güroglu et al., 2012), and these may be mediators of the links between parent variables and indicators of friendship quality. In the current study, I utilized longitudinal data from multiple informants to examine whether there might be dyadic effects in the area of maternal influences on children's perceptions of their friendship quality via children's social competence.

Maternal Beliefs and Children's Friendship Quality

The focal research question of the current study was to examine the ways in which mothers' child-rearing beliefs, specifically the belief that children should conform to adult expectations, were associated with children's perceptions of friendship quality. The results did not support the hypotheses that maternal child-rearing beliefs would have direct as well as indirect associations with children's friendship quality. Each of the focal path analysis models tested the direct effects of maternal beliefs on the perceived positive

friendship quality and conflict as reported by both children and in no case were these associations significant. In addition, tests of indirect effects, through children's prosocial or aggressive behavior, were not significant. Thus, there was no support for the hypothesis that the ways in which mothers think about child-rearing influence their children's perceptions of the quality of their friendships, either directly or indirectly. There was also no support for the hypothesis that mothers may shape the perceptions of friendship quality of their children's friends, either directly or indirectly.

The lack of significant associations between maternal child-rearing beliefs and children's friendship quality may be the result of missing mediating variables. Shrout and Bolger (2002) have suggested that in cases when the independent variable and the dependent variable are theoretically distal, the statistical power for testing the direct effect would be quite low and therefore it will be difficult to establish a significant association. However, adding a mediator, which theoretically and empirically links the two distal constructs, would increase the statistical power of the test. In this case, parenting beliefs are generally considered to have influences on children due to their impact on parenting behaviors rather than exerting direct influences on children (Kohn, 1969; Sigel & McGillicuddy-DeLisi, 2002). Therefore, a better test of the hypothesis that mothers shape their children's perceived friendship quality might have been that maternal conformity beliefs shape mothers' parenting behaviors, which then lead to associations with children's characteristics, which in turn shape children's friendship quality.

Although not hypothesized, one interesting finding related to the focal research question was that the child-rearing beliefs of friends' mothers were quite strongly

correlated. Above and beyond effects of race and income, friends' mothers' beliefs regarding the degree to which their children should conform to authority were very similar. This is consistent with a vast literature indicating that children tend to choose friends similar to themselves in terms of a wide range of characteristics (e.g., Barry & Wentzel, 2006; Cairns & Cairns, 1994). However, the characteristics generally examined are specific to individual children; it is rare to consider how the children's parents may be similar. The similarity of friends' mothers may be the result of the mothers themselves being friends (Coleman, 1988). Homophily in friendships is not exclusively a childhood phenomenon, adults also choose friends who are quite similar to themselves (McPherson, Smith-Lovin, & Cook, 2001), and therefore it stands to reason that mothers may choose friends who parent in similar ways. It could also be that children choose friends based on similarities of individual characteristics, such as externalizing behavior and perceived autonomy, that are shaped by their mothers' child-rearing beliefs (Mulvaney et al., 2007; Stright et al., 2009). Thus, childhood friends are similar in part because of their mothers' have similar beliefs systems. Future research should examine more closely how and why mothers of friends are similar over and above the effects of basic demographic characteristics.

Maternal Beliefs and Children's Social Competence

Across the various models, there was little evidence that maternal beliefs were associated with children's prosocial behavior. There was a significant actor effect between these variables in the fourth grade cross-sectional model, but when the variables were examined two years apart, the effect disappeared. It may be that mothers' beliefs regarding child conformity do not alter their parenting behavior as it relates to children's prosocial behavior. Valuing child conformity and obedience is not mutually exclusive from valuing prosocial behaviors such as empathy, sharing, or friendliness. As noted previously, there is little literature examining the associations between any dimensions of parenting and children's prosocial behavior, making it difficult to assess how the findings of the current study may or may not reflect patterns of association in other samples.

On the other hand, the associations between maternal beliefs and children's aggressive behavior were fairly consistent across models. Somewhat surprisingly, there were not only actor effects in this association but also significant partner effects. This means that higher levels of mothers' conformity beliefs were linked not only to their own children's higher levels of aggression, but also to their children's friends' levels of aggression. The reasons for the actor effects are relatively clear. Previous research has consistently found that parenting behaviors that are punitive, restrictive, or unresponsive are linked with children's aggression concurrently and prospectively (Soenens et al., 2008; Weiss et al., 1992). These parenting behaviors are also linked to higher levels of beliefs in child conformity, suggesting that child-rearing beliefs would have similar associations with children's aggression.

The reasons for partner effects from maternal child-rearing beliefs to children's aggression, indicating that mothers' beliefs predict the aggressive behavior of their children's friends, are somewhat less obvious. Although this association was not hypothesized, the fact that this partner effect remained even above and beyond the effects of children's own mothers' beliefs, previous levels of children's own aggression, child sex, child race, and families' income-to-needs ratios indicates that it is quite robust. It is certainly consistent with Bronfenbrenner's hypothesis that children's development is influenced by overlapping contexts (mesosystems) and even contexts they themselves are not included in (exosystems). Perhaps children's friends' mothers play a larger role in children's lives than has previously been assumed. When children spend time with their close friends, it is likely to be in environments where mothers are the primary authority figures, such as one of their homes, parks, or extracurricular activities. Therefore, mothers of children's friends likely have opportunities to function as socialization agents in ways that have not previously been examined. In order to assess this more fully, additional information would be required, such as the amount of time children spend with the mothers of their friends as well as the type of interactions they engage in, children's perceptions of friends' mothers, and the type of relationships children's own mothers have with the mothers of their friends.

Children's Social Competence and Perceived Friendship Quality

As has been observed in previous studies (Burk & Laursen, 2005; Simpkins et al., 2003), the members of friend dyads in the current sample reported similar levels of friendship quality. Yet there was still considerable discrepancy in their reports. In fact, the intraclass correlations between friends' reports of positive friendship quality and friendship conflict in both fourth and sixth grades were somewhat lower than has been found in previous dyadic friendship studies. Only 20-27% of the variance in these variables was accounted for by dyadic similarity. This is important because it suggests that much of what is measured by friendship quality reflects individual perceptions, which in turn suggests that individual characteristics of children could predict friendship quality, as was hypothesized in the current study.

Among all three prosocial behavior models, there was a single pathway to friendship quality that approached significance: higher levels of sixth-grade child prosocial behavior were associated with lower levels of their friends' perceptions of friendship conflict in sixth-grade (Model 3), but only before controlling for previous levels of prosocial behavior and friendship conflict (Model 5). Therefore, there was little to no support for the hypothesis that children's prosocial behavior would predict their own and their friends' perceptions of friendship quality.

One possibility that has yet to be considered is that perhaps children who are high in prosocial behavior have higher expectations of their friends and friendships and thus do not necessarily rate their friendships as more positive than other children. The literature examining the ways in which social cognition, such as relational expectations,

is related to friendship quality is relatively small, although there is some evidence that it contributes to children's overall social competence (McElwain et al., 2008; Rah & Parke, 2008). Further examination of the association between prosocial behavior and observed friendship quality may shed light on whether the lack of association found between prosocial behavior and friendship quality is related to children's perceptions or if these constructs remain unassociated when friendship quality is measured by an observer.

The associations between aggressive behavior and friendship quality were somewhat more consistent with hypotheses, although they varied from model to model. In the fourth-grade cross-sectional model (Model 2), children's own levels of aggression were related to their perceived friendship quality, such that children with higher levels of aggression rated their friendships as higher in conflict and lower in positive friendship quality. However, in the sixth-grade model (Model 4), the significance switched from actor effects to partner effects, such that higher levels of children's aggression were associated with their friends' higher reports of friendship conflict and results were similar for the model predicting changes in friendship quality (Model 6). Thus, as hypothesized, there was indication that children's aggression was related to their own and their friends' perceptions of friendship quality, and also that changes in children's levels of aggression were associated with changes in their friends' perceptions of friendship quality.

Across the focal models of the current study, there were fewer significant associations between children's social competence and their perceived friendship quality than were predicted. One possible explanation for this lack of associations may be due to the way that social competence was measured. It is probable that teachers' perceptions of

children's social competence are quite different from their friends' perceptions of prosocial behavior. As a result, teachers' reports of children's behavior may not be particularly relevant to the friendship context. For example, teachers' experience with children is primarily in a large group peer setting, which may elicit different behaviors from children than dyadic settings. In fact, most researchers and theorists agree that peer group contexts are substantively different from friendship, and that behavior in one of these contexts may not translate directly to similar behavior in the other context (Rubin, et al., 2006). For example, a child may appear withdrawn and isolated in the classroom, but is friendly, kind, and engaging when interacting one-on-one with a friend. Thus, in such a case, behavior in the classroom would be unlikely to predict friendship quality. In addition, teachers' evaluations of the indicators of prosocial or aggressive behavior may be different than those of children's peers. For instance, behaviors that teachers view as disruptive or threatening may be seen as far less concerning by peers and thus friends' evaluations of the relationship would not be influenced by these behaviors.

Partner and Actor Effects

Another hypothesis of the current study was that children's prosocial and aggressive behaviors would have stronger associations with their friends' perceptions of friendship quality than with their own perceptions. The support for this hypothesis was inconclusive. There was a trend-level partner effect of higher levels of prosocial behavior being linked to lower levels of friends' perceived friendship conflict in sixth grade (Model 3), although this effect dropped below significance thresholds when fourth grade variables were added as controls to the model (Model 5). The aggression models

provided greater support for this hypothesis. There were no partner effects from aggression to either friendship variable in the fourth-grade model (Model 2); however, both sixth grade models indicated that children's higher levels of aggression led to their friends reporting higher levels of friendship conflict. This finding remained after controlling for earlier levels of aggression and friendship quality (Model 6).

Empirical tests of the strength of actor and partner effects from aggression to friendship conflict revealed that the pathways were not significantly different, even when one path was significant and the other was not. So although there was some indication in the initial models that partner effects were stronger than actor effects, as was hypothesized, this was not conclusive.

Unlike the only previous study to examine actor and partner effects of prosocial and aggressive behaviors on dyadic perceptions of friendship quality (Cillessen, et al., 2005), the current study found few significant effects, either actor or partner. One reason for this difference may have been the age of the participants. Cillessen and colleagues examined these associations with adolescent friend dyads, ages 15 to 17. It is possible that by late adolescents, individuals' perceptions of friendship quality may be more sensitive to the characteristics of the individual friends. In addition, that study ran analyses separately for each friendship quality variable, which would reduce the shared variance of the dependent variables and inflate the possibility of significant associations.

Strengths and Limitations

This study had a number of methodological, analytical, and conceptual strengths. These strengths included the use of reports from two mothers, two children, and multiple

teachers for each participating dyad, which reduces the possibility that significant associations are the result of common source variance. It also allowed for the assessment of multiple levels of context as influences on children's friendships. This approach takes into consideration the complexities of children's lives and the multiple sources of influence they encounter daily. Focusing on the same friend dyads at two points, two years apart, allowed for the examination of how specific friends and friendships change over time, thus merging a developmental perspective with relationship research. Finally, approaching research questions with a dyadic analytic approach acknowledges that there are two friends in every friendship, and that each brings his or her own characteristics and influences to the relationship, as well as having his or her own perspectives on the relationship itself.

The current study may have had a problem of limited power. Although the precise number is disputed, in general, a ratio of 10 cases per parameter is advised in path analysis (Kline, 2011). Based on these recommendations, parameters in the models tested within this study far exceeded recommendations given sample size. For instance, in Model 6 there were 84 parameters estimated. Even with a liberal estimate of five cases per parameter, this model would require a sample of 420 dyads. In large part, of the large number of parameters within models was the result of control variables that were not initially considered in the proposed specification of the models. The inclusion of five demographic control variables (dyad sex, two child race variables, and two family income-to-needs ratio variables) increased the number of estimated parameters substantially. In addition, the longitudinal models included fourth grade variables as

controls. Therefore, the longitudinal models included 19 variables, far more than the six variables assumed by the originators of APIMeM analyses (Ledermann, et al., 2012).

In addition, this study was limited by the variables available in the SECCYD study. In particular, the choice to focus on maternal child-rearing beliefs was determined largely by availability rather than on theoretical grounds. As noted previously, one possibility for future research is to examine parenting behaviors as a mediator of associations between maternal child-rearing beliefs and child social competence. Such variables were not available in the SECCYD study at the time points of interest.

The measurement of friendship quality in the current study is another limitation. First, the friendship quality measure administered to this sample was an abbreviated version of the original scale that did not have established validity and reliability. The factor analyses conducted on this abbreviated version indicated that it did not conform to the psychometric properties of the original measure. However, preliminary analyses did indicate that despite this, the composites created for this study were reliable and were correlated with other variables in expected ways, suggesting validity. Even if the full version of the measure had been utilized, though, there would still be measurement concerns. As noted in the introduction, the field of friendship research has struggled with issues related to consistent, valid measurement of friendship quality, and although the FQQ (Parker & Asher, 1993) is generally considered acceptable, it also has significant limitations. This measure fails to differentiate the individual and dyadic components of friendship quality, making it difficult for use within dyadic analyses. It also emphasizes positive dimensions of friendships over negative dimensions, which does not allow for a

thorough examination of all elements of friendships. Future research will need to evaluate current measures of children's friendship quality more closely and consider alternatives.

Theoretically, there are strong justifications to expect that children's own social competence, and that of their friends, should shape the quality of their friendships. The components of friendship quality, such as intimacy, companionship, and caring all require certain individual social skills such as perspective-taking, effective communication, and the ability to discern social cues. However, this study, along with others, showed little evidence that children's social competence is associated with friendship quality. Future research needs to consider why this is the case. Perhaps these constructs are measured too broadly to capture the complexity of their associations, or perhaps the use of adults' reports of children's social competence do not reflect the types of social competencies that are important to peers. The mismatch between theory and empirical work suggests there is much more work to do regarding this association.

Overall, this study took a complex approach to examining the ways in which mothers may influence their children's friendships and the results provided some support for this approach. Findings suggested that the mothers of children's friends do indeed influence children, although not necessarily via the means hypothesized. In addition, findings demonstrated some support for the hypothesis that children's friends' characteristics are stronger predictors of perceived friendship quality than are children's own characteristics. Thus, the contextual, dyadic approach utilized in the current study contributes to the literature examining predictors of friendship quality.

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APPENDIX A

TABLES

Table 1

Fit Statistics for Exploratory Factor Analyses of Friendship Quality Questionnaire

Grade 4									
Model	EFA Models					Difference Tests of Relative Fit			
	χ^2	<i>df</i>	CFI	TLI	RMSEA	Comp.	$\Delta\chi^2$	Δdf	<i>p</i>
One Factor	722.77	152	.74	.71	.11				
Two Factor	374.80	134	.89	.86	.07	1 vs. 2	347.97	18	.00
Three Factor	260.15	117	.94	.91	.06	2 vs. 3	114.65	17	.00
Four Factor	175.38	101	.97	.94	.05	3 vs. 4	84.77	16	.00

Table 2

Rotated Factor Loadings for Exploratory Factor Analyses of Friendship Quality Questionnaire

Items	4 th Grade		
	1	2	3
This friend and I get mad at each other a lot.	.09	.82*	.00
This friend tells me I'm good at things.	.57*	-.07	-.04
If other kids were talking behind my back, this friend would always stick up for me.	.64*	.03	.09
This friend and I make each other feel important and special.	.60*	-.16*	.09*
This friend and I always pick each other as partners.	.41*	.03	.04
This friend tells me I'm pretty smart.	.70*	-.02	-.10
This friend and I are always telling each other about our problems.	.73*	.16*	-.07
This friend makes me feel good about my ideas.	.68*	-.11	.00
When I'm mad about something that happened to me, I can always talk to this friend about it.	.78*	.06	.01
This friend and I argue a lot.	-.15*	.70*	-.03
When I'm having trouble figuring something out, I usually ask this friend for help and advice.	.74*	-.01	-.10
This friend and I always make up easily when we have a fight.	.20*	-.01	.41*
This friend and I fight.	-.01	.72*	.06
This friend and I loan each other things all the time.	.37*	.17*	.04
This friend often helps me with things so I can get done quicker.	.58*	.06	.07
This friend and I always get over our arguments really quickly.	.00	.00	.99*
This friend and I always count on each other for ideas on how to get things done.	.64	-.06	.00
This friend doesn't listen to me.	-.02	.21*	-.18*
This friend and I tell each other private things a lot.	.62*	.23*	.04

Table 3

Standardized Factor Loadings for Confirmatory Factor Analysis Model of Friendship Quality Questionnaire

Factors and Items	4 th Grade		6 th Grade	
	Loading	S.E.	Loading	S.E.
Positive Friendship Quality				
4. This friend tells me I'm good at things.	.59	.03	.62	.03
5. If other kids were talking behind my back, this friend would always stick up for me.	.59	.03	.68	.03
6. This friend and I make each other feel important and special.	.72	.03	.78	.02
7. This friend and I always pick each other as partners.	.53	.03	.53	.04
8. This friend tells me I'm pretty smart.	.63	.03	.69	.03
9. This friend and I are always telling each other about our problems.	.67	.03	.75	.02
10. This friend makes me feel good about my ideas.	.72	.02	.79	.02
11. When I'm mad about something that happened to me, I can always talk to this friend about it.	.74	.02	.83	.02
13. When I'm having trouble figuring something out, I usually ask this friend for help and advice.	.71	.03	.71	.02
16. This friend and I loan each other things all the time.	.34	.04	.40	.04
17. This friend often helps me with things so I can get done quicker.	.57	.03	.63	.03
19. This friend and I always count on each other for ideas on how to get things done.	.66	.03	.68	.03
21. This friend and I tell each other private things a lot.	.59	.03	.68	.03
Conflict				
3. This friend and I get mad at each other a lot.	.73	.03	.89	.02
12. This friend and I argue a lot.	.72	.03	.84	.02
15. This friend and I fight.	.66	.03	.72	.03
Conflict Resolution				
14. This friend and I always make up easily when we have a fight.	.68	.04	.75	.03
18. This friend and I always get over our arguments really quickly.	.71	.04	.73	.03

Note: All factor loadings significant at $p < .001$

Table 4

Correlations and Descriptive Statistics of Model Variables

	1	2	3	4	5	6	7	8	9	10	11
1. Child Sex	--										
2. F1 Race	-.02	--									
3. F2 Race	-.07	.47***	--								
4. F1 Income	.10	-.22***	-.13*	--							
5. F2 Income	-.01	-.19**	-.15*	.40***	--						
6. F1 Mat. Beliefs	-.09	.20**	.20**	-.36***	-.38***	--					
7. F2 Mat. Beliefs	.03	.23***	.25***	-.22***	-.34***	.34***	--				
8. F1 Prosocial G4	.16*	-.13*	-.28***	.36***	.30***	-.30***	-.24***	--			
9. F2 Prosocial G4	.17**	.01	-.12	.14*	.22**	-.19**	-.17**	.26***	--		
10. F1 Prosocial G6	.19**	-.07	-.24***	.19**	.04	-.22***	-.13	.43***	.16*	--	
11. F2 Prosocial G6	.30***	-.22**	-.22**	.18**	.19**	-.22**	-.06	.19**	.41***	.23**	--
12. F1 Aggressive G4	-.17**	.17**	.17**	-.23***	-.07	.19**	.17**	-.44***	-.47***	-.39***	-.45***
13. F2 Aggressive G4	-.15*	.12	.14*	-.14*	.19**	.21**	.21**	-.46***	-.32***	-.43***	-.18*
14. F1 Aggressive G6	-.23***	.10	.20**	-.22***	-.09	.23***	.16**	-.32***	-.40***	-.43***	-.40***
15. F2 Aggressive G6	-.28***	.14*	.24***	-.16*	-.18**	.30***	.20**	-.39***	-.23**	-.47***	-.34***
16. F1 Positive FQ G4	.18***	-.05	-.05	.12*	.04	-.01	-.00	.13*	-.02	.01	.07
17. F2 Positive FQ G4	.20***	.11*	.09	-.02	-.00	.04	.06	.17**	.05	.11	.06
18. F1 Positive FQ G6	.29***	.01	-.05	.08	-.04	.03	-.03	.07	.08	.02	.02
19. F2 Positive FQ G6	.26***	.04	.00	.08	.08	-.09	-.06	.18**	.08	.17**	.09
20. F1 Conflict G4	.00	-.04	-.01	-.02	.01	.07	.08	-.15*	.02	-.05	.03
21. F2 Conflict G4	.03	-.03	.00	.00	.00	.04	.05	-.15*	.02	-.11	-.04
22. F1 Conflict G6	-.51	.07	.09	-.10	-.04	.14*	.13*	-.08	-.05	-.08	-.10
23. F2 Conflict G6	.03	.02	-.05	-.09	-.05	.07	.03	-.15*	.01	-.12	.00
Mean	.45	.18	.19	4.30	4.48	2.66	2.66	1.56	1.56	1.49	1.51
S.D.	.50	.39	.39	3.11	3.85	.67	.66	.38	.37	.39	.39
N	309	300	291	294	284	302	294	257	252	244	237

	12	13	14	15	16	17	18	19	20	21	22	23
12. F1 Aggressive G4	--											
13. F2 Aggressive G4	.22**	--										
14. F1 Aggressive G6	.62***	.24***	--									
15. F2 Aggressive G6	.28***	.54***	.28***	--								
16. F1 Positive FQ G4	-.10	.05	-.02	-.00	--							
17. F2 Positive FQ G4	-.05	-.11	-.04	-.05	.19**	--						
18. F1 Positive FQ G6	.01	-.09	-.00	-.04	.42***	.20***	--					
19. F2 Positive FQ G6	-.11	-.13*	-.12*	-.08	.26***	.51***	.22***	--				
20. F1 Conflict G4	.08	.15*	.04	.07	-.20***	-.14*	-.16**	-.11	--			
21. F2 Conflict G4	.05	.12	-.02	.05	-.09	-.24***	-.02	-.22***	.25***	--		
22. F1 Conflict G6	.13*	.08	.04	.14*	-.10	-.12*	-.10	-.13*	.40***	.23***	--	
23. F2 Conflict G6	.11	.07	.07	.09	-.05	-.13*	-.03	-.26***	.14*	.43***	.29***	
Mean	.36	.32	.34	.35	3.90	3.87	4.06	4.01	1.23	1.30	1.19	1.20
S.D.	.38	.35	.37	.37	.73	.73	.75	.76	.26	.29	.25	.23
N	272	237	295	222	309	309	309	309	309	309	309	309

Note: F1 = Friend 1, F2 = Friend 2, FQ = Friendship Quality, G4 = Grade 4, G6 = Grade 6

Table 5

Intraclass Correlations of Dyadic Variables

	Intraclass Correlation	F	<i>p</i>
1. Maternal Beliefs	.34	2.03	.000
2. Prosocial G4	.29	1.80	.000
3. Prosocial G6	.20	1.50	.000
4. Aggressive G4	.26	1.70	.000
5. Aggressive G6	.28	1.78	.000
6. Positive FQ G4	.20	1.49	.000
7. Positive FQ G6	.22	1.57	.000
8. Conflict G4	.25	1.67	.000
9. Conflict G6	.27	1.75	.000

Note: FQ = Friendship Quality, G4 = Grade 4, G6 = Grade 6.

Table 6

Model 1: Cross-sectional Fourth Grade Model with Prosocial Mediator Standardized and Unstandardized Model Estimates,
95% Bias-Corrected Confidence Intervals

	Standardized Estimate	<i>p</i>	Unstandardized Estimate	Confidence Intervals	
				Lower	Upper
Covariances Between Paired Variables					
Maternal Beliefs	.20	.00	.07	.024	.122
Prosocial Behavior	.17	.01	.02	.005	.039
Positive Friendship Quality	.15	.01	.08	.024	.142
Conflict	.24	.00	.02	.010	.029
Additional Covariances					
Positive FQ and Conflict (Actor)	-.23	.00	-.05	-.067	-.027
Positive FQ and Conflict (Partner)	-.12	.00	-.02	-.045	-.005
Actor Paths					
Maternal Beliefs to Prosocial	-.10	.03	-.06	-.111	-.002
Maternal Beliefs to Positive FQ	.06	.21	.06	-.033	.159
Maternal Beliefs to Conflict	.05	.31	.02	-.017	.055
Prosocial to Positive FQ	.06	.23	.11	-.097	.307
Prosocial to Conflict	-.03	.53	-.02	-.089	.046
Partner Paths					
Maternal Beliefs to Prosocial	-.08	.08	-.05	-.103	.006
Maternal Beliefs to Positive FQ	.02	.61	.03	-.076	.121
Maternal Beliefs to Conflict	.06	.22	.02	-.004	.009
Prosocial to Positive FQ	.05	.29	.10	-.091	.309
Prosocial to Friendship Conflict	-.06	.18	-.05	-.119	.021

Note: FQ = Friendship quality. Model fit: χ^2 (47, $N = 309$) = 77.74, $p = .00$, CFI = .90, TLI = .85, RMSEA = .05 [CI = .027, .064]. Model controls for dyad sex, child race, and families' 4th grade income-to-needs ratios.

Table 7

Model 2: Cross-sectional Fourth Grade Model with Aggression Mediator Standardized and Unstandardized Model Estimates,
95% Bias-Corrected Confidence Intervals

	Standardized Estimate	<i>p</i>	Unstandardized Estimate	Confidence Intervals	
				Lower	Upper
Covariances Between Friends					
Maternal Beliefs	.20	.05	.05	.024	.122
Aggressive Behavior	.17	.04	.02	.005	.043
Positive Friendship Quality	.15	.01	.08	.029	.149
Friendship Conflict	.24	.00	.02	.009	.028
Additional Covariances					
Positive FQ and Conflict (Actor)	-.23	.00	-.05	-.066	-.027
Positive FQ and Conflict (Partner)	-.12	.02	-.02	-.045	-.005
Actor Paths					
Maternal Beliefs to Aggression	.09	.05	.05	.000	.101
Maternal Beliefs to Positive FQ	.05	.25	.06	-.040	.155
Maternal Beliefs to Conflict	.04	.36	.02	-.018	.052
Aggression to Positive FQ	-.09	.06	-.19	-.388	.010
Aggression to Friendship Conflict	.09	.04	.07	.003	.139
Partner Paths					
Maternal Beliefs to Aggression	.11	.03	.06	.004	.120
Maternal Beliefs to Positive FQ	.02	.69	.02	-.079	.116
Maternal Beliefs to Conflict	.05	.30	.02	-.018	.058
Aggression to Positive FQ	.04	.45	.07	-.116	.260
Aggression to Friendship Conflict	.06	.21	.05	-.027	.114

Note: FQ = Friendship quality. Model fit: χ^2 (47, $N = 309$) = 56.58, $p = .16$, CFI = .96, TLI = .95, RMSEA = .03 [CI = .000, .047]. Model controls for dyad sex, child race, and families' 4th grade income-to-needs ratios.

Table 8

Model 3: Prospective Fourth Grade to Sixth Grade Model with Prosocial Mediator Standardized and Unstandardized Model

Estimates, 95% Bias-Corrected Confidence Intervals

	Standardized Estimate	<i>p</i>	Unstandardized Estimate	Confidence Intervals	
				Lower	Upper
Covariances Between Friends					
Maternal Beliefs	.20	.00	.07	.025	.122
Prosocial Behavior	.13	.08	.02	.000	.038
Positive Friendship Quality	.16	.01	.08	.024	.151
Friendship Conflict	.29	.00	.02	.010	.024
Additional Covariances					
Positive FQ and Conflict (Actor)	-.18	.00	-.03	-.046	-.015
Positive FQ and Conflict (Partner)	-.08	.07	-.01	-.028	.000
Actor Paths					
Maternal Beliefs to Prosocial	-.04	.43	-.02	-.076	.033
Maternal Beliefs to Positive FQ	.02	.65	.02	-.080	.127
Maternal Beliefs to Conflict	.04	.30	.02	-.013	.042
Prosocial to Positive FQ	-.04	.33	-.09	-.253	.090
Prosocial to Friendship Conflict	.01	.89	.01	-.062	.070
Partner Paths					
Maternal Beliefs to Prosocial	-.07	.21	-.04	-.100	.022
Maternal Beliefs to Positive FQ	-.06	.25	-.06	-.176	.041
Maternal Beliefs to Conflict	.07	.11	.03	-.005	.056
Prosocial to Positive FQ	.04	.25	.07	-.108	.238
Prosocial to Friendship Conflict	-.10	.06	-.06	-.131	-.001

Note: FQ = Friendship quality. Model fit: χ^2 (48, $N = 309$) = 70.86, $p = .02$, CFI = .92, TLI = .89, RMSEA = .04 [CI = .017, .058]. Model controls for dyad sex, child race, and families' 4th grade income-to-needs ratios.

Table 9

Model 4: Prospective Fourth Grade to Sixth Grade Model with Aggression Mediator Standardized and Unstandardized Model

Estimates, 95% Bias-Corrected Confidence Intervals

	Standardized Estimate	<i>p</i>	Unstandardized Estimate	Confidence Intervals	
				Lower	Upper
Covariances Between Friends					
Maternal Beliefs	.20	.00	.07	.025	.122
Aggressive Behavior	.18	.02	.02	.005	.038
Positive Friendship Quality	.16	.01	.08	.025	.152
Friendship Conflict	.28	.00	.02	.009	.024
Additional Covariances					
Positive FQ and Conflict (Actor)	-.18	.00	-.03	-.047	-.016
Positive FQ and Conflict (Partner)	-.08	.06	-.01	-.028	.000
Actor Paths					
Maternal Beliefs to Aggression	.10	.04	.05	.001	.104
Maternal Beliefs to Positive FQ	.02	.71	.02	-.085	.124
Maternal Beliefs to Conflict	.04	.37	.01	-.016	.041
Aggression to Positive FQ	.07	.14	.13	-.112	.304
Aggression to Friendship Conflict	-.00	.97	-.00	-.064	.065
Partner Paths					
Maternal Beliefs to Aggression	.13	.01	.07	.022	.121
Maternal Beliefs to Positive FQ	-.06	.21	-.07	-.182	.036
Maternal Beliefs to Conflict	.07	.14	.02	-.007	.054
Aggression to Positive FQ	-.02	.66	-.04	-.221	.133
Aggression to Friendship Conflict	.09	.04	.06	.002	.120

Note: FQ = Friendship quality. Model fit: χ^2 (48, $N = 309$) = 65.79, $p = .04$, CFI = .94, TLI = .92, RMSEA = .04 [CI = .006, .054]. Model controls for dyad sex, child race, and families' 4th grade income-to-needs ratios.

Table 10

Model 5: Fourth Grade to Sixth Grade Model with Prosocial Mediator, Controlling for Fourth-Grade Measures, Standardized and Unstandardized Model Estimates, 95% Bias-Corrected Confidence Intervals

	Standardized Estimate	<i>p</i>	Unstandardized Estimate	Confidence Intervals	
				Lower	Upper
Covariances Between Matched Variables					
Maternal Beliefs	.19	.00	.07	.024	.121
Prosocial Behavior	.11	.13	.01	-.002	.030
Positive Friendship Quality	.04	.54	.01	-.031	.061
Friendship Conflict	.22	.00	.01	.005	.016
Additional Covariances					
Positive FQ and Conflict (Actor)	-.22	.02	-.01	-.027	-.004
Positive FQ and Conflict (Partner)	-.05	.44	-.01	-.015	.006
Actor Paths					
Maternal Beliefs to Prosocial	-.01	.81	-.01	-.056	.046
Maternal Beliefs to Positive FQ	.00	.95	.00	-.087	.096
Maternal Beliefs to Conflict	.02	.60	.01	-.020	.034
Prosocial to Positive FQ	-.04	.29	-.08	-.236	.070
Prosocial to Friendship Conflict	.04	.46	.02	-.038	.083
Partner Paths					
Maternal Beliefs to Prosocial	-.05	.33	-.03	-.086	.028
Maternal Beliefs to Positive FQ	-.06	.13	-.07	-.165	.018
Maternal Beliefs to Conflict	.05	.25	.02	-.011	.044
Prosocial to Positive FQ	.01	.86	.02	-.144	.168
Prosocial to Friendship Conflict	-.07	.12	-.05	-.104	.010

Note: FQ = Friendship Quality, G4 = Grade 4, G6 = Grade 6. Model fit: χ^2 (115, $N = 309$) = 173.61, $p = .00$, CFI = .91, TLI = .88, RMSEA = .04 [CI = .028, .053]. Model controls for dyad sex, child race, families' 4th grade income-to-needs ratio, 4th grade prosocial behavior, 4th grade positive friendship quality, and 4th grade friendship conflict.

Table 11

Model 6: Longitudinal Fourth Grade to Sixth Grade Model with Aggression Mediator, Controlling for Fourth-Grade Measures, Standardized and Unstandardized Model Estimates, 95% Bias-Corrected Confidence Intervals

	Standardized Estimate	<i>p</i>	Unstandardized Estimate	Confidence Intervals	
				Lower	Upper
Covariances Between Friends					
Maternal Beliefs	.20	.00	.07	.024	.121
Aggressive Behavior	.04	.63	.00	-.008	.015
Positive Friendship Quality	.08	.21	.03	-.017	.079
Friendship Conflict	.21	.00	.01	.005	.016
Additional Covariances					
Positive FQ and Conflict (Actor)	-.10	.01	-.10	-.026	-.002
Positive FQ and Conflict (Partner)	-.03	.50	-.03	-.014	.006
Actor Paths					
Maternal Beliefs to Aggression	.06	.17	.03	-.013	.074
Maternal Beliefs to Positive FQ	.00	.95	.03	-.089	.092
Maternal Beliefs to Conflict	.04	.36	.01	-.014	.041
Aggression to Positive FQ	.02	.66	.04	-.115	.207
Aggression to Friendship Conflict	-.02	.73	-.01	-.067	.046
Partner Paths					
Maternal Beliefs to Aggression	.08	.05	.04	-.001	.083
Maternal Beliefs to Positive FQ	-.06	.12	-.07	-.155	.021
Maternal Beliefs to Conflict	.06	.13	.02	-.007	.046
Aggression to Positive FQ	-.07	.07	-.14	-.302	.016
Aggression to Friendship Conflict	.08	.04	.05	.004	.107

Note: FQ = Friendship Quality, G4 = Grade 4, G6 = Grade 6. Model fit: $\chi^2(123, N = 309) = 171.73, p = .00, CFI = .94, TLI = .92, RMSEA = .04 [CI = .022, .048]$. Model controls for dyad sex, child race, families' 4th grade income-to-needs ratio, 4th grade aggression, 4th grade positive friendship quality, and 4th grade.

APPENDIX B

FIGURES

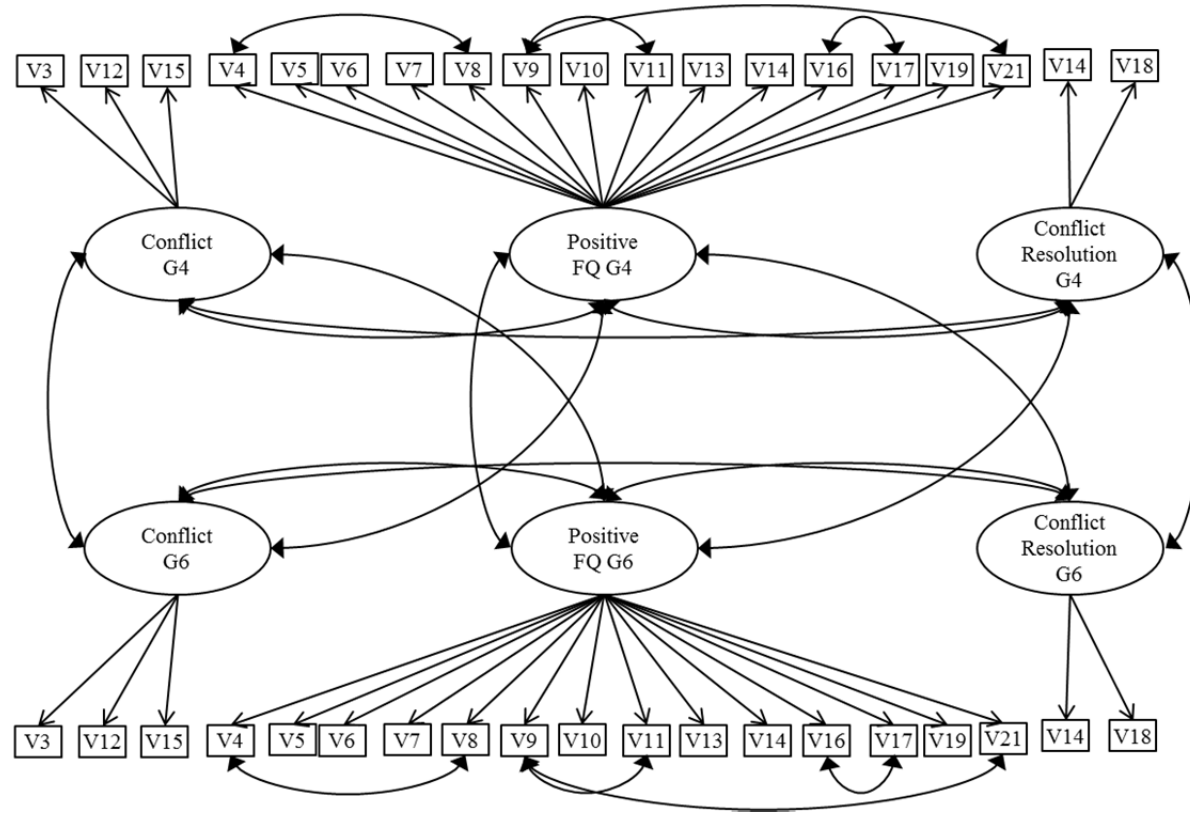


Figure 2. Confirmatory Factor Analysis of the Friendship Quality Questionnaire. Model fit: $\chi^2 (571, N = 618) = 1391.89, p = .00$, CFI = .92, RMSEA = .05 [.045, .051]. FQ = Friendship Quality, G4 = Grade 4, G6 = Grade 6.

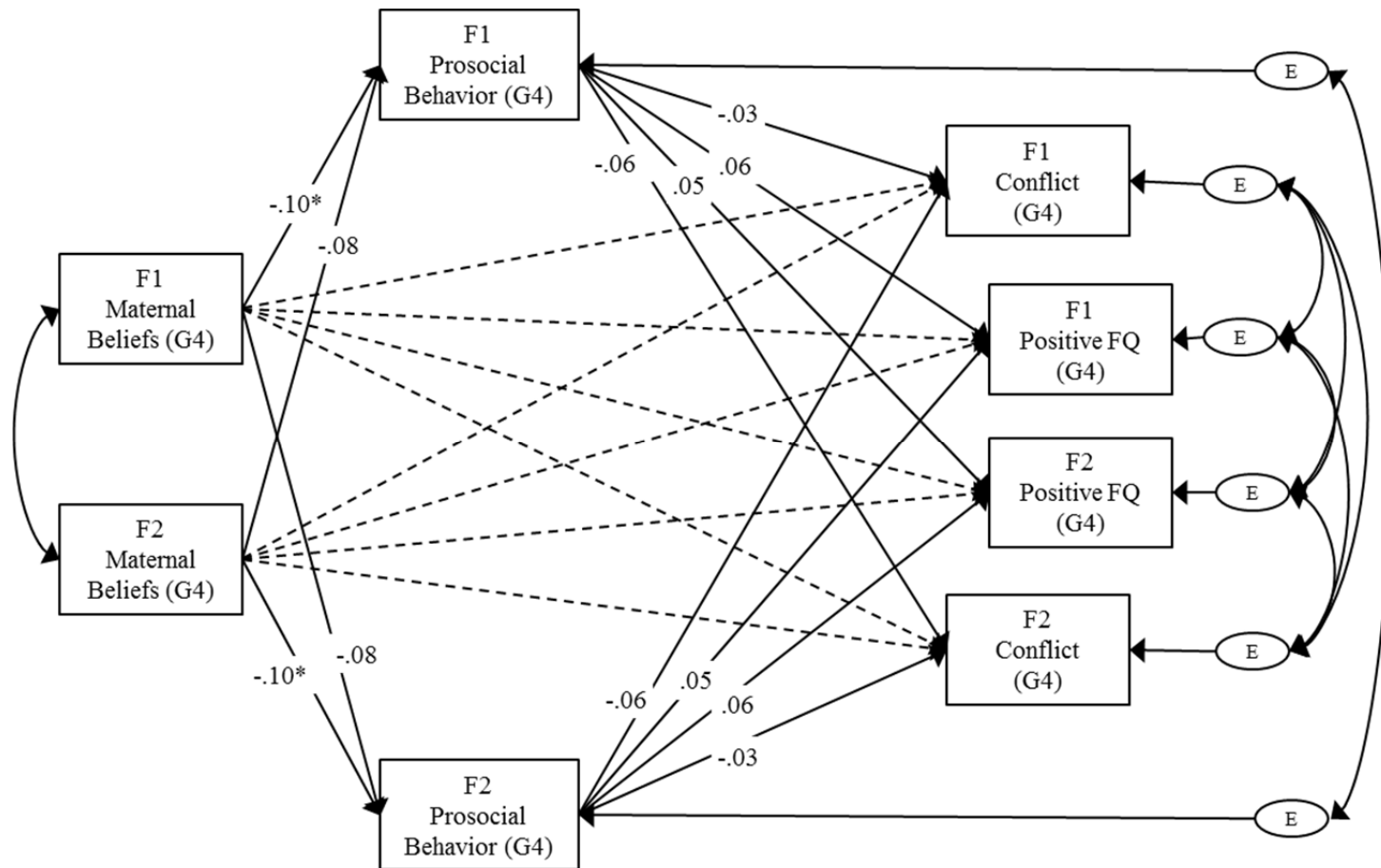


Figure 3. Standardized estimates for Model 1. Model fit: $\chi^2 (47, N = 309) = 77.74, p = .00, CFI = .90, RMSEA = .05$. F1 = Friend 1, F2 = Friend 2, FQ = Friendship Quality, G4 = Grade 4. Control variables not pictured: gender, child race, family income-to-needs ratio. $*p < .05, **p < .01, ***p < .001$.

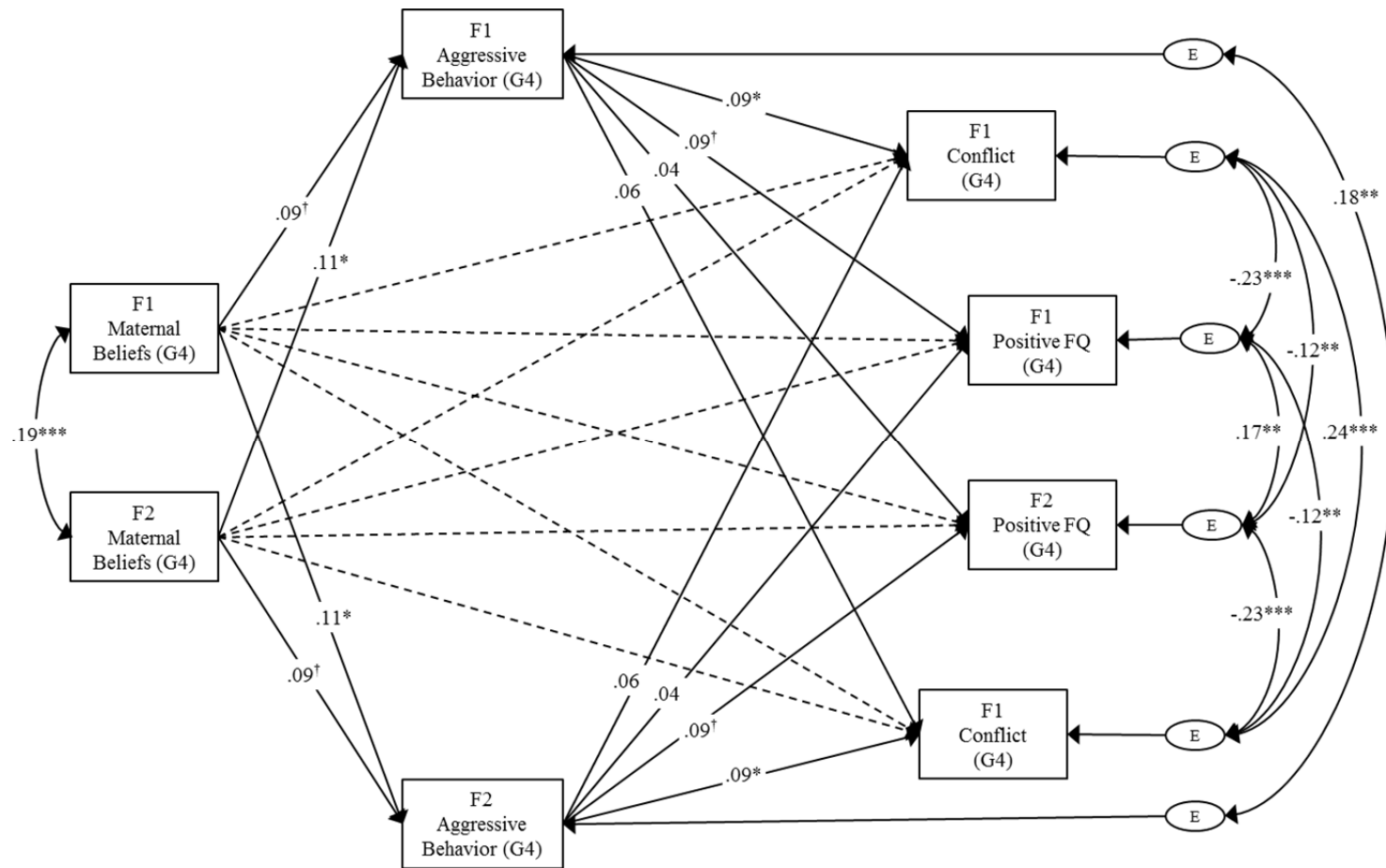


Figure 4. Standardized estimates for Model 2. Model fit: $\chi^2 (47, N = 309) = 56.58, p = .16, CFI = .96, RMSEA = .03$. F1 = Friend 1, F2 = Friend 2, FQ = Friendship Quality, G4 = Grade 4. Control variables not pictured: gender, child race, family income-to-needs ratio. [†] $p < .08$, * $p < .05$, ** $p < .01$, *** $p < .001$.

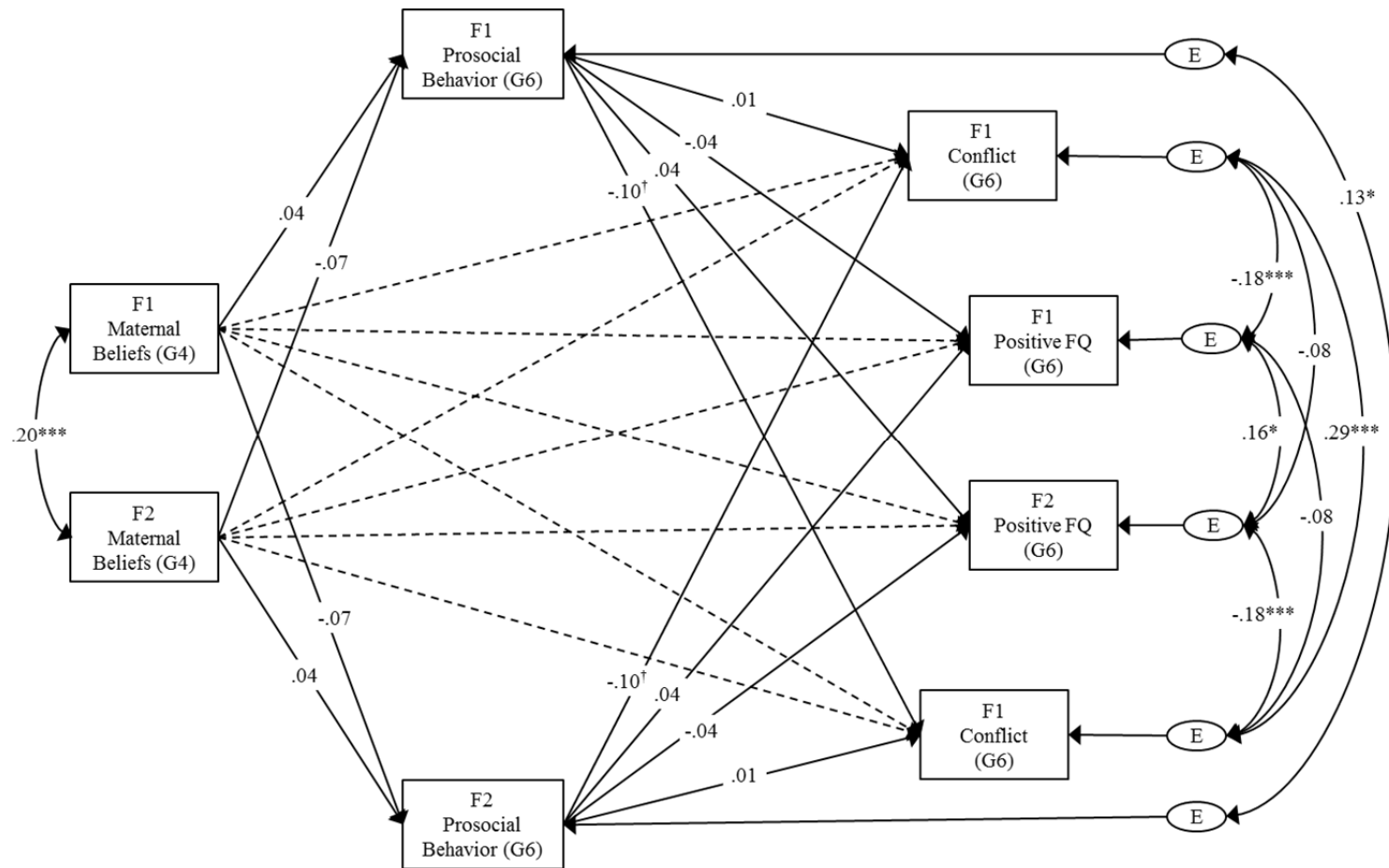


Figure 5. Standardized estimates for Model 3. Model fit: $\chi^2 (48, N = 309) = 70.86, p = .02, CFI = .92, RMSEA = .04$. F1 = Friend 1, F2 = Friend 2, FQ = Friendship Quality, G4 = Grade 4, G6 = Grade 6. Control variables not pictured: gender, child race, family income-to-needs ratio. † $p < .08$, * $p < .05$, ** $p < .01$, *** $p < .001$.

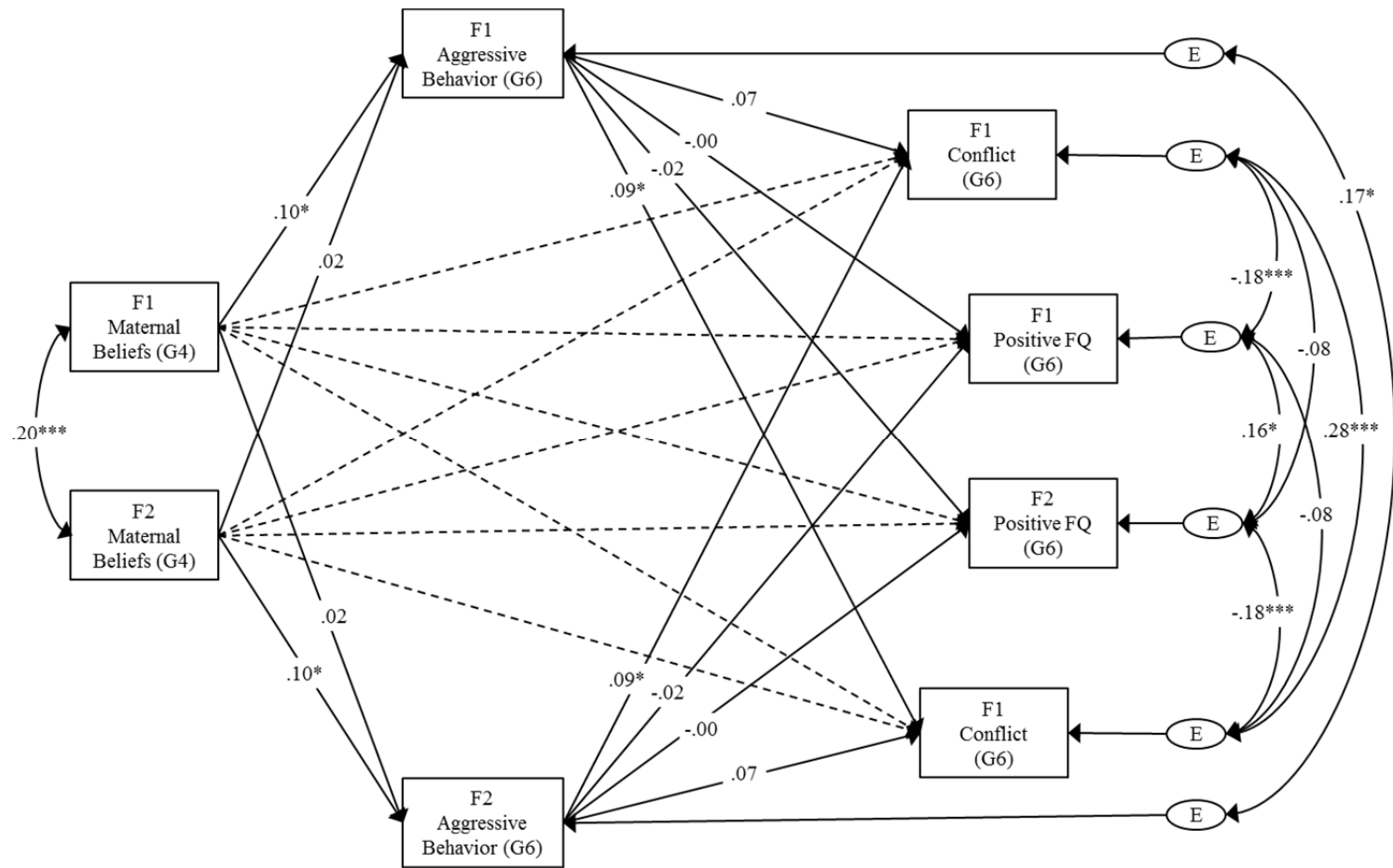


Figure 6. Standardized estimates for Model 4. Model fit: $\chi^2 (48, N = 309) = 65.79, p = .04$, CFI = .94, RMSEA = .04. F1 = Friend 1, F2 = Friend 2, FQ = Friendship Quality, G4 = Grade 4, G6 = Grade 6. Control variables not pictured: gender, child race, family income-to-needs ratio. $^{\dagger}p < .08$, $*p < .05$, $**p < .01$, $***p < .001$.

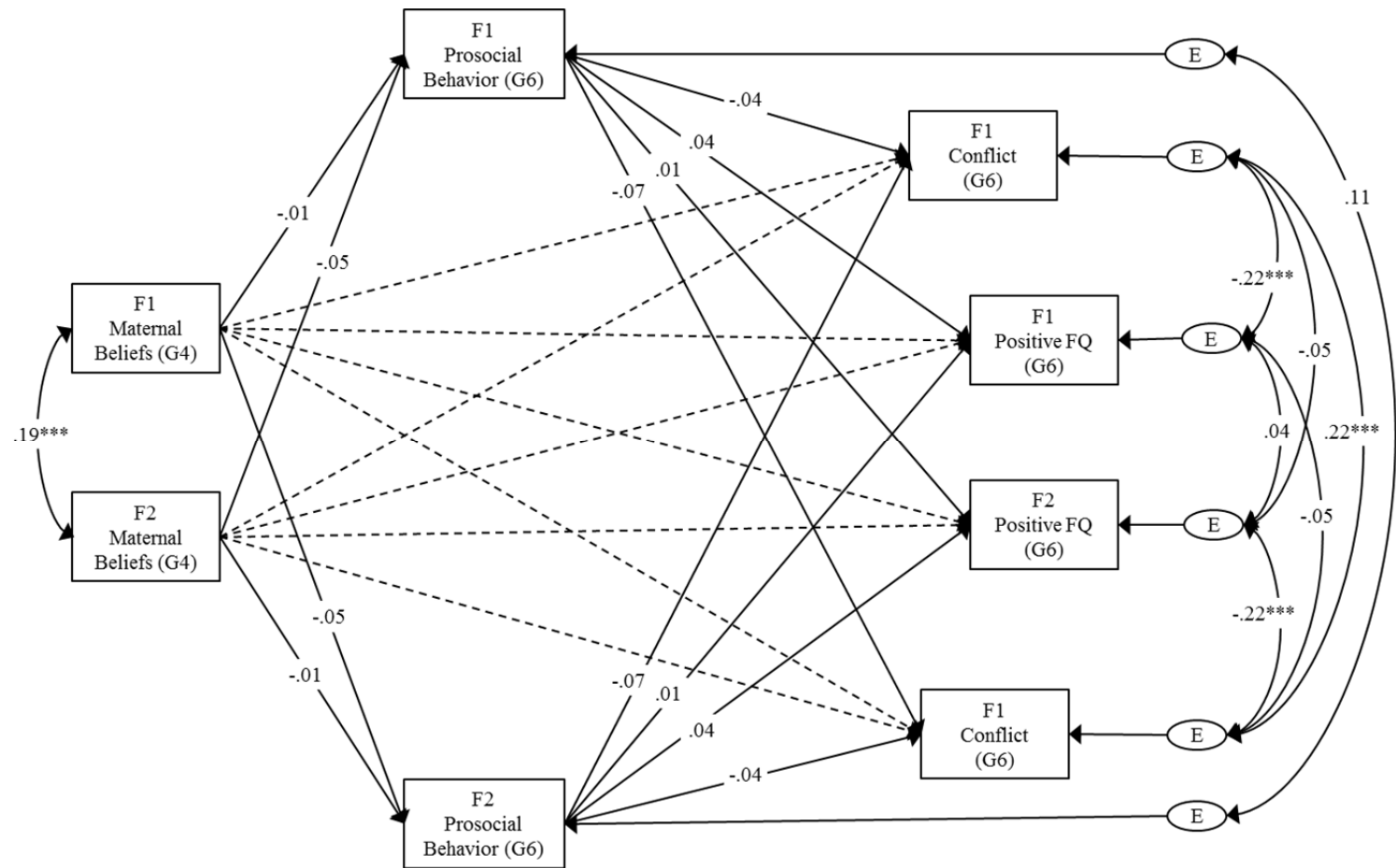


Figure 7. Standardized estimates for Model 5. Model fit: χ^2 (123, $N = 309$) = 172.99, $p = .00$, CFI = .91, RMSEA = .04. F1 = Friend 1, F2 = Friend 2, FQ = Friendship Quality, G4 = Grade 4, G6 = Grade 6. Control variables not pictured: gender, child race, family income-to-needs ratio, 4th grade prosocial behavior and friendship variables. [†] $p < .08$, $*p < .05$, $**p < .01$, $***p < .001$.

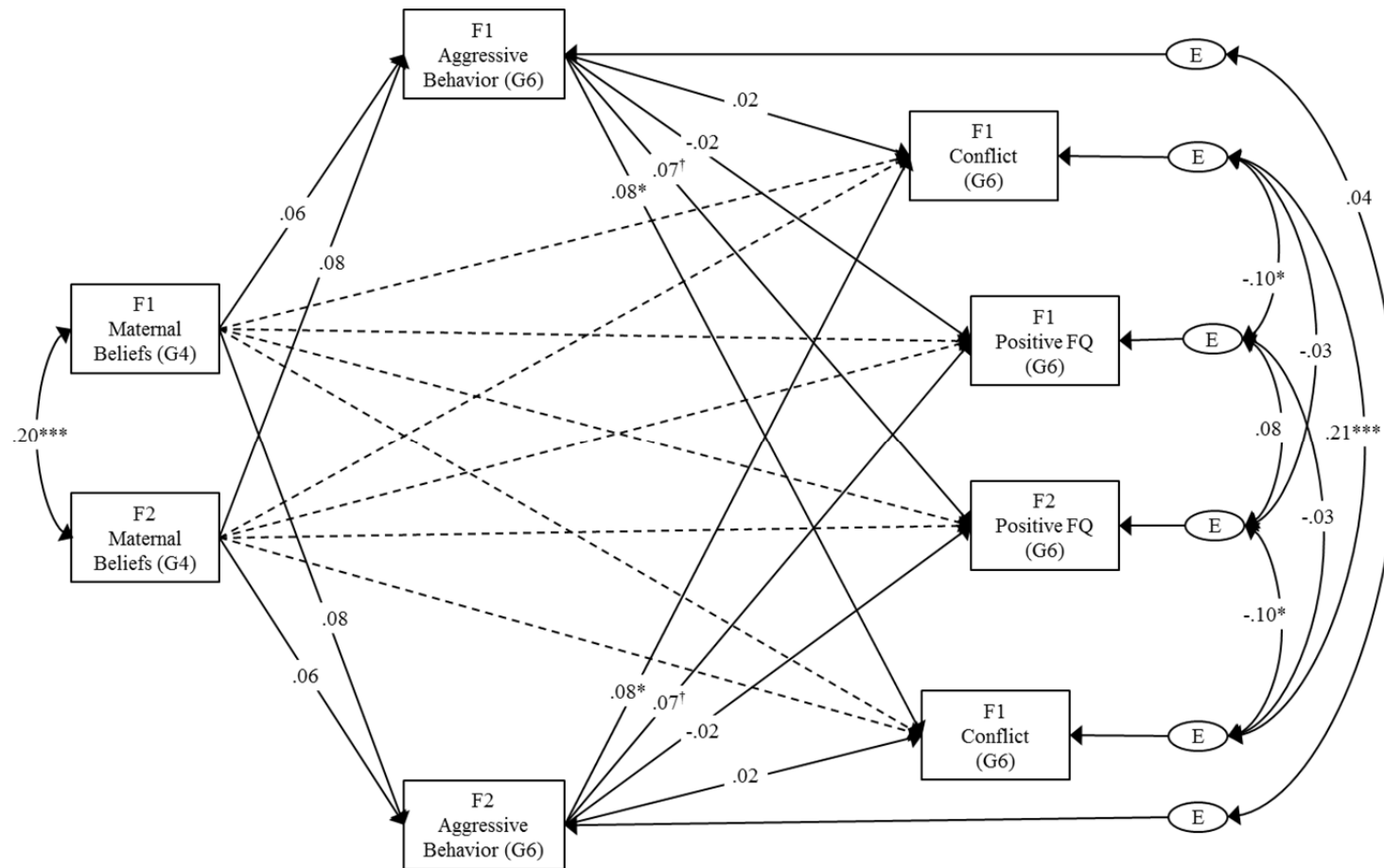


Figure 8. Standardized estimates for Model 6. Model fit: $\chi^2(123, N = 309) = 171.73, p = .00, CFI = .91, RMSEA = .04$. F1 = Friend 1, F2 = Friend 2, FQ = Friendship Quality, G4 = Grade 4, G6 = Grade 6. Control variables not pictured: gender, child race, family income-to-needs ratio, 4th grade aggressive behavior and friendship variables. $^\dagger p < .08$, $*p < .05$, $**p < .01$, $***p < .001$.

APPENDIX C

MEASURES

Parental Modernity Scale

Schaefer and Edgerton, 1985

1 = “*Strongly disagree*” to 5 = “*Strongly agree*”

Traditional Subscale

1. Since parents lack special training in education, they should not question the teacher’s teaching methods
2. Children should be treated the same regardless of differences among them.
3. Children should always obey the teacher.
4. Preparing for the future is more important for a child than enjoying today.
5. Children will not do the right thing unless they must.
7. Children should be kept busy with work and study at home and at school.
8. The major goal of education is to put basic information into the minds of the children.
9. In order to be fair, a teacher must treat all children alike.
10. The most important thing to teach children is absolute obedience to whoever is in authority.
12. Children must be carefully trained early in life or their natural impulses will make them unmanageable.
14. Children’s learning results mainly from being presented basic information again and again.
16. The most important thing to teach children is absolute obedience to parents.
17. The school has the main responsibility for a child’s education.
18. Children generally do not do what they should unless someone sees to it.
19. Parents should teach their children that they should be doing something useful at all times.
21. Children should always obey their parents.
22. Teachers need not be concerned with what goes on in a child’s home.
24. Parents should teach their children to have unquestioning loyalty to them.
25. Teachers should discipline all the children the same.
26. Children should not question the authority of their parents.
28. Children will be bad unless they are taught what is right.
30. A teacher has no right to seek information about a child’s home background.

Child Social Behavior
Ladd & Profilet, 1996
Kochenderfer & Ladd, 1996
Crick, 1996

0 = Not True, 1 = Sometimes True, 2 = Often True

Prosocial Behavior Subscale

- 7. Seems concerned when other children are distressed.
- 13. Takes turns with play materials.
- 14. Kind toward peers.
- 16. Listens to classmates.
- 19. Compromises in conflict with peers
- 21. Is cooperative with peers
- 24. Friendly toward other children
- 29. Shows concern for moral issues (e.g., fairness, welfare of others).
- 32. Offers help or comfort when other children are upset.

Aggressive Behavior Subscale

- 1. Tends to react to other children's distress by teasing them or making things worse
- 8. Is an aggressive child.
- 9. Taunts and teases other children.
- 11. Threatens other children.
- 22. Loses temper easily in conflicts with peers.
- 23. Argues with peers.
- 25. Annoys or irritates other children.
- 27. Disrupts peers' activities.
- 34. Will continue to bother or hurt other children even when they are clearly upset

Friendship Quality Questionnaire

Parker & Asher, 1993

1 = *Not at all true* to 5 = *Really true*

Positive Friendship Quality Subscale

2. This friend and I would always like to sit together at lunch.
4. This friend tells me I'm good at things.
5. If other kids were talking behind my back, this friend would always stick up for me.
6. This friend and I make each other feel important and special.
7. This friend and I always pick each other as partners.
8. This friend tells me I'm pretty smart.
9. This friend and I are always telling each other about our problems.
10. This friend makes me feel good about my ideas.
11. When I'm mad about something that happened to me, I can always talk to this friend about it.
13. When I'm having trouble figuring something out, I usually ask this friend for help and advice.
14. This friend and I always make up easily when we have a fight.
16. This friend and I loan each other things all the time.
17. This friend often helps me with things so I can get done quicker.
18. This friend and I always get over our arguments really quickly.
19. This friend and I always count on each other for ideas on how to get things done.
20. This friend doesn't listen to me.
21. This friend and I tell each other private things a lot.

Negative Friendship Quality Subscale

3. This friend and I get mad at each other a lot.
12. This friend and I argue a lot.
15. This friend and I fight.
20. This friend doesn't listen to me.